

4.5 HISTORICAL RESOURCES

The following information on historical resources is based on the historical resources report for the project prepared by Gallegos & Associates (January 2005). This report assesses potential impacts to historical resources as a result of implementation of the proposed project. Appendix C of this EIR contains the entire report, which is summarized in this section.

Historical resources are categorized into two subtopics: archaeological and historic. Archaeological resources (generally located below ground surface) are divided into two categories, pre-historic and historic. Pre-historic archaeological resources date from before the onset of the Spanish Colonial period (1769-1848) and historic archaeological resources date from after the onset of the Spanish Colonial period. A historic resource (generally located above ground) is any building, structure, or object that is at least 45 years of age and that is, or may be, significant architecturally or historically in city, state or national history.

4.5.1 EXISTING CONDITIONS

PREHISTORY

The current research of prehistoric occupation in San Diego County recognizes the existence of at least two major historical traditions, the Early Period (Archaic) and the Late Period (Ethnohistoric), based upon general economic trends and material culture. Within San Diego County the Early Period includes the period from circa 10,000 and 1,300 years ago. The Late Period includes from 1,300 years ago to historic contact. The Historic Period covers the time from Spanish contact to present.

EARLY PERIOD (ARCHAIC)

The Early Period includes the San Dieguito and the La Jolla complexes. Initially believed to represent big-game hunters, the San Dieguito are better typified as a hunting and gathering society. These people had a relatively diverse and non-specialized economy in which relatively mobile bands accessed and used a wide range of plants, animal, and lithic resources. The gradual desiccation of the vast pluvial lake system that dominated inland basins and valleys during the last altithermal and those of Early Period sites in San Diego County may have spurred movement of early groups into San Diego County. The origin of coastal populations, and the subsequent interaction between this population and the Great Basin/desert groups, is a subject of debate (Gallegos 1987). Whatever their origin, the first occupants immediately exploited the coastal and inland resources of plants, animals, shellfish, and fish (Moriarty 1967; Kaldenberg 1982; Gallegos 1991).

The development of a generalized economic system indicates that the San Dieguito and related groups can be placed within the general pattern of the Early Period. These cultures can occur within North America at slightly different times in different areas, but they are generally correlated with local economic specialization growing out of the earlier Paleo-Indian Tradition (Willig et. al. 1988). More diverse artifact assemblages and more complex regional variation than Paleo-Indian traditions often represent Early Period cultures. Generally, this was thought to have resulted from the general shift away from a herd-based hunting focus to a more diverse and area-specific economy.

By 2,000 years ago, Yuman-speaking people occupied the Gila/Colorado River drainage (Moriarty 1967). Based on evidence from the Spindrift site in La Jolla, Moriarty (1965, 1966) suggested that a pre-ceramic Yuman culture had been established along the San Diego coastline as early as 2000 years ago. Between 1,200

and 800 years ago, the technology of ceramic manufacture had been introduced from the eastern deserts and was established as part of the Late Period artifact assemblage.

The Otay Mesa region is unique given the extensive but not intensive lithic scatters that cover the mesa top, and are interspersed with habitation sites and the quarries located on the mountain slopes. This pattern reflects the presence of Santiago Peak volcanic material across the mesa in the form of cobbles and tabular deposits from local mountains and mesa tops. This material was highly valued by Native Americans, who used both cobbles and mountain quarry sources of this fine-grained metavolcanic material for tools.

Uncertainty remains regarding precontact occupation and use of the Otay Mesa area. Site patterning in the Otay Mesa area suggests that lithic resource acquisition was a primary activity. The identification of habitation sites also indicates that these sites were used as base camps from which a wide range of activities was conducted. Radiocarbon dating of materials from archaeological sites within the Otay Mesa region identified precontact occupation from 10,000 years ago to historic contact.

LATE PERIOD (ETHNOHISTORIC)

The project area is located within the Kumeyaay/Diegueno territory (Krober 1925). The language of the group is classified as part of the Yuman-language family and is often considered part of the Hokam stock. Dialects of this language are still spoken (Shipek 1978). According to Luomala (1978:592), the territory of the Tipai, the southern Kumeyaay group, included parts of southern San Diego County and Mexico. The Kumeyaay area covered a range of environmental zones, from oceanfront to bays and estuaries for food procurement, and from foothills to mountains for the exploitation of plants, animals, and tool materials.

During the Late Period, a material culture pattern similar to that of historic Native Americans first becomes apparent in the archaeological record. The economic pattern during this period appears to be one of more intensive and efficient exploitation of local resources. The prosperity of these highly refined economic patterns is well evidenced by the numerous Kumeyaay/Diegueno and Luiseño habitation sites scattered over San Diego County. This increase in Late Period site density probably reflects a population increase within the region and better preservation of the more recent archaeological record. Artifacts and historical patterns reflecting this Late Period pattern include small projectile points, pottery, the establishment of permanent or semi-permanent seasonal village sites, a proliferation of acorn milling sites in the uplands, the appearance of obsidian from Obsidian Butte, and the use of interment by cremation.

Many of the Late Period culture patterns in southern California were shared with groups along the eastern periphery of the region. Even in the most recent periods, Native Americans of southern California incorporated many elements of their neighbors into their own cultures. This transference and melding of historical traits among neighboring groups makes difficult any positive associations of archaeological deposits with particular ethnographically known cultures. This is particularly true of the groups within San Diego County. Though significant differences exist between Luiseño and Diegueno cultures (including linguistic stock), the long interaction of these groups during the Late Period resulted in the exchange of many social patterns. Archaeologists must rely heavily on ethnographic accounts of group boundaries recorded during the historic period, although it is not known how long these boundaries have been in place or how valid these boundaries are as reported.

The numerous Late Period sites within San Diego County identify human occupation and activity for many centuries. After contact with Spanish, Mexican, and American settlers, Native American populations were decimated by resettlement and disease. Presently, Native American groups are found throughout San Diego County, especially within the 18 San Diego County reservations.

HISTORICAL

REGIONAL HISTORY

The history of San Diego County reflects economic, political, and social characteristics associated with Spanish, Mexican, and American political rule. The Spanish Period (1769 – 1821) represents the earliest period of settlement, characterized by the establishment of a presidio, missions, and mission outposts, and the introduction of non-native animals, agrihistorical products, and building methods. The Mexican Period of rule (1821 – 1848) is historically linked with land grants, commonly referred to as ranchos, which were originally considered to be the territory of the indigenous population. The American Period (1848 to the present) began when Mexico ceded California to the United States under the Treaty of Guadalupe Hidalgo in 1848.

An influx of people to California in the latter half of the nineteenth century was the result of various factors, primarily the discovery of gold in 1848; the availability of free public land, which occurred when land grants were invalidated after 1851; the conclusion of the Civil War in 1865; and the availability of land through the Homestead Act of 1862 and timber-culture laws.

In rural San Diego County, the population did not expand noticeably until after 1870. In 1871, the No Fence Law accelerated a decline in cattle ranges and an increase in crop-producing areas. In the 1880s, the San Diego area was nationally advertised as a desirable location due to health advantages, availability of urban and rural lands, a commendable record of crop productivity, and the availability of railroad transportation to support a broad market. Rural communities appeared and disappeared during the boom and bust years in the late 1800s.

LOCAL HISTORY

Settlement of Otay Mesa began in the 1870s. Many of the early pioneers were German immigrants, who acquired land under the Homestead Act of 1862, through timber-culture laws, or by direct purchase of acreage from the government or individual landowners. Otay Mesa is similar to a number of rural settlements in San Diego County that began in the 1870s and 1880s and endured into the twentieth century. These settlements were comprised of farming families who shared a similar environmental setting and were socially, economically, and politically united within a common school district. Settlers considered the construction of a schoolhouse a top priority after building family dwellings. In the early years of the settlement of Otay Mesa, the schoolhouse also served as a church and a community center for social activities. Such gatherings played an important role in communication amongst the people living in this remote agrihistorical settlement. Social activities provided temporary relief from the hard farm work. Prior to the turn of the century, a church and a cemetery had been established on Otay Mesa. The only commercial buildings in the early years were located, for a short duration, at Siempre Viva, near the eastern end of the mesa. Following the demise of Siempre Viva, the post office was transferred to a residence in the vicinity of Alta School.

Dry farming was employed on the mesa because of the lack of a reliable water source for irrigation purposes. Wheat, barley, and corn were among the early successful crops planted that continued to be grown throughout the following decades (Painter 1985:59). A variety of other crops planted on the mesa included peaches, apricots, grapes, potatoes, beans, and peas (Painter 1985:72). As late as 1961, the rural residents of Otay Mesa were forced to rely on catch basins, wells, and cisterns to obtain and store water for agricultural and domestic needs (Painter 1985:70).

The population gradually decreased due to periodic droughts, unsuccessful attempts to secure water for irrigation and the effects of the Great Depression in the 1930s. As the early residents moved out and sold their property, the land on Otay Mesa continued to be used for agriculture, particularly for the production of

row crops. In recent years, the development of business parks has increased and some farmland lies fallow. Limited evidence visible on the landscape reveals the former presence of this rural community. The only visual reminders of former agricultural settlement include sparse remnants of olive and eucalyptus trees, agricultural fields, a few buildings, building foundations, and surface artifacts.

All activities on the mesa were oriented toward agriculture until 1918, when the U.S. Navy used the general area to the north of Otay Mesa Road as an airfield. The area was used by the military on a periodic basis until 1954. A number of buildings constructed by the military during World War II remain in use as components of Brown Field Airport. To the north of Brown Field, starting along the southern edge of the Otay River Valley is Otay Ranch. Historic ownership began with the grant of the Otay and Janal ranchos. Over the years, the ranchos changed hands and expanded in size. Today, this land is collectively known as Otay Ranch.

METHODOLOGY

A literature review and records search of known and potentially significant sites were assembled through a records search at the South Coastal Information Center (SCIC), San Diego State University, San Diego, California, and the library of Gallegos and Associates to identify previous work, previously recorded historical resources, National Register listed and eligible properties, California Historical Landmarks, Points of Historic Interest, and locally listed historic properties and structures within the project area. In addition, early USGS maps were reviewed for early historic structures; however, no historic structures were identified within the OMTS project alignments.

Two field surveys were conducted in July 2003 and one survey was conducted in August 2003. Due to the existing development, the field surveys were limited to: (1) assessment of previously recorded resources, examination of lesser-developed areas of Phases 2A1, 2A2, 2B1 and 2B2 and pump stations 23T and A1; and, (2) undeveloped portions of the Phase 2D, 2E, and 2F. The areas were surveyed on foot using a 10-meter interval between survey transects with a hand-held GPS unit. Location maps of previously recorded resources were uploaded to the GPS unit for specific site locations and areas of lesser disturbance were located and surveyed using a map provided by the client. Sites are identified by state trinomials with numbers that identify the state (CA), county (SDI), and the number of the site recorded in the county (CA-SDI-xxx). Phase 3 was not included in the field survey because it would be constructed between 2020 and 2050. Future development would be expected to alter resources found along Phase 3 prior to its construction. Therefore, a field survey was not deemed necessary at this time.

RECORD SEARCH RESULTS

Historical resources within the project study area were mapped and are summarized in Table 4.5-1 and discussed below. The literature review and record search identified 18 historical resources within or adjacent to the project study area. Four types classified the historical resources identified during the record search: habitation sites, artifact scatters, lithic scatters, and isolates. The site classifications are described below:

- *Habitation Site:* A habitation site contains a variety of artifacts, which may include flaked lithics, ground stone, ceramics, and ecofacts (i.e., bone and shell), as well as bedrock milling features. The presence of some or all of these artifacts or features suggests that more than one activity occurred at the site. Habitation sites contain a midden deposit, suggesting seasonal or semi-permanent occupation.
- *Artifacts Scatter:* Artifact scatters are light-duty camp sites and are defined as surface scatters of a few artifacts, such as flaked lithics, tools, ground stone, and ceramics. Ecofacts such as bone and shell also may be present on this type of site; therefore, an artifact scatter may represent a stopping

place on a journey, an area where a task was completed, or a special-purpose site. This site type differs from a habitation site in that it does not contain a subsurface deposit (midden).

- *Lithic Scatter*: A lithic scatter is a scatter of debitage, cores, temporally undiagnostic bifaces, and other flake- and core-based tools. For this study, such sites are presumed to lack diagnostic artifacts.
- *Isolate Find*: This refers to the occurrence of one or two artifacts, which, by State of California definition, does not constitute a site. It should be noted that in the past some isolates have been given State of California site numbers.

Table 4.5-1. Historical Resources Sites Within or Adjacent to the Proposed Project Alignment

Construction Phase	Site Number	Site Type	Site Status	Recommendation
2D, 2E, 3	CA-SDI-6941	Habitation	Loci A-E, G, Y identified as not significant	No further work for Loci A-E, G, and Y
2B2, 2E, 3	CA-SDI-7208	Lithic Scatter	Partially not significant, partially not known	No further work for tested portions
3	CA-SDI-8053	Isolate	Not significant	No further work
3	CA-SDI-8064	Isolate	Not significant	No further work
2B2, 2E	CA-SDI-10185	Habitation	Loci A and C Significant; Loci B Not significant	Mitigated (Hector 1988)
2D, 2E, 3	CA-SDI-10188	Artifact Scatter	Not significant	No further work
2A1	CA-SDI-10197	Artifact Scatter	Not significant	No further work
2A2	CA-SDI-10511	Artifact Scatter	Not significant	No further work
3	CA-SDI-10748	Lithic Scatter	Not significant	No further work
2B2, 2E, 3	CA-SDI-10963	Lithic Scatter	Portions not significant, portions unknown	Testing
3	CA-SDI-11215	Lithic Scatter	Not significant	No further work
3	CA-SDI-11216	Lithic Scatter	Not significant	No further work
2E, 2B2, 3	CA-SDI-11424	Habitation	Significant	Data Recovery or Avoidance
3	CA-SDI-11673	Lithic Scatter	Not significant	No further work
3	CA-SDI-12229	Artifact Scatter, Historic	Not significant	No further work
3	CA-SDI-12337	Habitation	Not significant	No further work
2D, 2E, 3	CA-SDI-14083	Lithic Scatter	Unknown	Test
2D, 2E, 3	CA-SDI-14084	Lithic Scatter	Unknown	Test

Note: Construction Phase 3 not surveyed. Recommendations are from previous studies.

Source: Gallegos & Associates, October 2004.

The distribution of the 20 sites identified during the record search include: five habitation sites, three artifact scatters, one artifact scatter/historic, 9 lithic scatters, and two isolates site.

CA-SDI-6941: Site CA-SDI-6941 was originally recorded as four lithic scatters consisting of five core fragments and 20 flake/debitage located north of Otay Mesa Road. Research potential was noted to be very good at one of the four loci that contained midden and a surface scatter. A site update was later completed and described as a large temporary camp and identified four loci (A through D) with the densest concentration of artifacts at Locus A. Artifacts noted included flakes, one leaf-shaped San Dieguito III projectile point, one biface fragment, one domed scraper, flaked and ground stone tools, debitage, a subsurface deposit, and faunal material. Surface collection of Loci A, D, and F produced debitage, flaked lithic tools, one projectile point, knives, ground stone, shell, and bone. Loci A and F were identified during this study as not significant/important. Locus D was determined to be a significant historical resource; however, a portion was tested later and the data recovered from the site was limited and the site was disturbed and no intact midden or features were identified. Subsequent surveys have extended the boundary of this site by 2,000 feet south of Otay Mesa Road, west to Dillon's Trail, and east to a finger of Spring Canyon. Dense artifact concentrations were identified east of Dillon's Trail near the southern boundary of the site, and along fingers of Spring Canyon. The remainder of the site appears to contain a sparse lithic scatter. With the exception of Locus F, the portion of CA-SDI-6941 south of Otay Mesa Road has not been tested for significance. Although a concentration of diverse historical material associated with long-term or repeated habitation was recovered from the portion of site CA-SDI-6941 located within the proposed Airway Road and Caliente Boulevard access road, this portion of the site was identified as not significant/important due to lack of stratigraphic integrity. As a result, no additional work was recommended. Testing identified Loci G and Y to be surface scatters with no subsurface historical deposit. These loci were identified as not significant and no further work was recommended.

CA-SDI-7208: Site CS-SDI-7208 was recorded as a lithic workshop located south of Airway Road with three cores and 16 debitage collected from the surface of the site, artifacts that were visible between crops of tomatoes, green peppers, and zucchini. The site was enlarged during subsequent studies with an extension north of Airway Road and a second extension from the southwest corner of the original site location, south to the U.S./Mexico International Border. The present shape of this site reflects previous work for individual property owners and for areas surveyed during the SR 905 study, when the ground was not obscured by vegetation. However, the actual boundary may extend to the north, to the west, and to the east. Large portions of this site have been tested during the SR 905 project and identified as not significant under CEQA.

CA-SDI-8053: Site CA-SDI-8053 was originally recorded as a lithic isolate, located east of La Media Road. The site was updated and no additional artifacts were identified. This site was identified as not significant and no further work was recommended.

CA-SDI-8064: Site CA-SDI-8064 was originally recorded as two isolated flakes located east of La Media Road. The site was updated and no additional artifacts were identified. This site was identified as not significant and no further work was recommended.

CA-SDI-10185: Site CA-SDI-10185 was recorded as a temporary camp. The historic materials observed included groundstone, large flakes tools, debitage, and faunal remains. Hearths and subsurface midden deposits were identified at Locus A, as well as a dense artifact concentration that contained 33 scrapers, 334 flakes, 14 cores, eight choppers, one hammer, one elo-ear point base, one biface fragment, shell, and unidentified bone fragments. Groundstone, large flaked tools, debitage and faunal remains were observed at Locus B. Later surveys identified a third locus (Locus C) south of Locus A. Locus C was described as a lithic scatter of "flakes, core, and tools with no midden or dark soil comparable to that of Locus A". Loci A

and C were identified as significant and a data recovery program was completed. The site has since been destroyed by construction of a business complex.

CA-SDI-10188: Site CA-SDI-10188 was described as having two loci. Locus A included one scraper, one core, and three flakes. Locus B included nine flakes, one scraper, one chopper, and *Chione* sp. shell. Later testing and visits revealed poor integrity of the site due to plowing, grading, and road construction, as the site is located within an area of automobile junkyards. The site was identified as not significant.

CA-SDI-10197: Site CA-SDI-10197 was described as a sparse lithic scatter with two loci south of Otay Mesa Road. Locus A included 20 flakes and one core. Locus B included two flakes. The site was identified as not significant.

CA-SDI-10511: Site CA-SDI-10511 was recorded as a sparse scatter of lithic debitage and flaked stone tools. A cluster of artifacts was noted at each end of the site and a sparse scatter of historical material connected these artifacts. This site was relocated and four discrete loci were identified and determined as not significant.

CA-SDI-10748: Site CA-SDI-10748 was described as a large lithic scatter located south of Otay Mesa Road. A test program was conducted and no subsurface deposits were present. As a result of this testing program, this site was identified as not significant.

CA-SDI-10963: Site CA-SDI-10963 was described as a light lithic scatter, consisting of numerous debitage and flaked tool artifacts. This site is located south of Otay Mesa Road and Brown Field. No subsurface deposits were identified and the site was determined to be not significant. Two structures shown on early USGS maps were identified within the western extension of the site. The southwest and western portions have not been tested to determine site significance.

CA-SDI-11215: Site CA-SDI-11215 was recorded as a light lithic scatter located north of Otay Mesa Road. A test program was completed at the site to evaluate significance and produced a small quantity of lithic artifacts. However, due to low artifact density, this site was identified as not significant.

CA-SDI-11216: Site CA-SDI-11216 is located north of Otay Mesa Road. The site was recorded as a light lithic scatter with no subsurface deposits. A testing program determined the site not to be significant.

CA-SDI-11424: Site CA-SDI-11424 is located south of Otay Mesa Road, adjacent to Cactus Road, and is situated in agrihistorical fields south of a tributary of Spring Canyon. The site has been described as a large base camp with hundreds of artifacts, shell, and subsurface midden deposits. Artifacts noted include an Elko Eared projectile point fragment, discoidal scrapers, unifacial scrapers, cores, flakes, manos, and metate fragments. This site was relocated and based on surface artifact distribution; the boundaries were enlarged to the south and east. Testing identified a rich subsurface historical deposit with large quantities of historical materials and the site was recommended as eligible for nomination for listing in the National Register of Historic Places.

CA-SDI-11673: Site CA-SDI-11673 was described as a light lithic scatter located north of Otay Mesa Road. Testing produced negative results and the site was identified as not significant.

CA-SDI-12229/H: Site CA-SDI-12229/H was comprised as military bunkers with an associated precontact artifact scatter consisting of three core/cobble tools, one hammerstone, 15 volcanic flakes, and one *Chione* sp. shell fragment. Testing identified a sparse, shallow historical deposit with considerable disturbance from grading activities that occurred as a result of construction of the World War II bunkers. Protein residue

analysis identified piñon antiserum on two tools, one scraper plane, and one scraper. Historic and archival research identified the bunkers as ammunition storage magazines build during World War II, when Brown Field was used by the Navy as an auxiliary air facility. No unique or unusual qualities, associations, or attributes were identified. The site was identified as not significant.

CA-SDI-12337: Site CA-SDI-12337 is located at the east end of Otay Mesa Road extending north from Otay Mesa Road to Johnson Canyon, south to Airway Road. This site is described as a large prehistoric quarrying area and/or an area where extensive processing of plant resources was occurring. The site surface is littered with large quantities of debitage, cores and flake tools, smaller quantities of ground stone and shellfish remain. Late Prehistoric artifacts are conspicuously absent from the site, suggesting a La Jollan Period affiliation. Portions of the site have been tested and determined to be not significant and not eligible for listing in the National Register of Historic Places. Loci A and B are located south of Otay Mesa Road and extend west to the intersection of Harvest Road and Otay Mesa Road. The majority of the artifacts from both loci were recovered from the site surface. Due to agricultural disturbance and lack of an intact subsurface deposit, Loci A and B were identified as not significant under the City of San Diego Historical Resources Regulation and CEQA.

CA-SDI-14083: Site CA-SDI-14083 is located north of Otay Mesa Road and described as a sparse lithic scatter. Artifacts noted included one metavolcanic core, one core/tool, and three debitage. The status of this site is unknown.

CA-SDI-14084: Site CA-SDI-14084 is located north of Otay Mesa Road and described as sparse lithic scatter with four metavolcanic flakes clustered on and around a mima mound on the east edge of a drainage area. An additional three flakes and one core were noted. The status of this site is unknown.

FIELD SURVEY RESULTS

The literature review and record search identified 18 historical resources within or adjacent to the project study area. Of the 18 identified sites, 10 are located within or adjacent to the alignments/locations of Phases 2A1, 2A2, 2B1, 2B2, 2B3, 2D, 2E, and 2F, and eight are located solely within or adjacent to the Phase 3 alignment. However, the Phase 3 sewer improvements are anticipated to occur between 2020 and 2050. Therefore, the Phase 3 sites identified during the record search are anticipated to change with future development and were not evaluated during the field survey.

Six of the previously recorded sites and/or portions of these sites (CA-SDI-6941, CA-SDI-10185, CA-SDI-10188, CA-SDI-10197, CA-SDI-10511, and portions of CA-SDI-10963) that are located within the project alignments have been destroyed and/or capped by previous development. Five of the previously recorded sites or portions of these sites (CA-SDI-7208, CA-SDI-11424, CA-SDI-14083, CA-SDI-14084, and CA-SDI-10963) were relocated and no change in site condition was noted.

RELEVANT POLICIES

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Under the CEQA Guidelines (Section 15064.5), a significant historic resource is one that qualifies for the California Register of Historical Resources or is listed in a local historic register or deemed significant in a historical resource survey, as provided under Section 5024.1(g) of the Public Resource Code. A resource that is not listed in or is not determined to be eligible for listing in the California Register of Historical Resources, is not included in a local register of historic resources, and is not deemed significant in a historical resource survey may nonetheless be historically significant for purposes of CEQA.

CITY OF SAN DIEGO HISTORIC RESOURCES REGULATIONS (HRR)

The purpose of the City's HRR regulations is to protect, preserve and, where damaged, restore the historical resources of San Diego, which include historical buildings, historical structures or historical objects, important archaeological sites, historical districts, historical landscapes and traditional cultural properties. These regulations are intended to assure that development occurs in a manner that protects the overall quality of historical resources.

Section 143.0212(b) of the HRR requires that the Historical Resource Sensitivity Maps be used to identify properties that have a likelihood of containing archaeological sites based on records from the SCIC at San Diego State University and the San Diego Museum of Man, and based on site-specific information on file with the City. If it is demonstrated that archaeological sites exist on or immediately adjacent to any property, whether identified for review or not, the City Manager shall require a survey. If it is demonstrated that archaeological sites do not exist on any property identified for review, the Historical Resource Sensitivity Maps shall be updated to remove that property from the review requirements.

Section 143.0212(d) of the HRR states that if a site-specific survey is required, it shall be conducted consistent with the Historical Resources Guidelines of the Land Development Manual (April 2001). Based on the site-specific survey and the best information available, the City Manager shall determine whether a historical resource exists, whether a potential historical resource is eligible for designation as a *designated historical resource* by the Historical Resources Board in accordance with Chapter 12, Article 3, Division 2 of the Land Development Code, and the precise location of the resource.

4.5.2 IMPACT SIGNIFICANCE CRITERIA

A project would normally have a significant impact if it would disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or historical significance to a community or ethnic or social group; except as a part of a scientific study. According to CEQA guidelines, an important prehistoric or historic resource is one which:

- Is associated with an event or person of recognized significance in California or American history, or recognized scientific importance in prehistory;
- Can provide information which is both of demonstrable public interest and useful in addressing scientifically consequential and reasonable or archaeological research questions;
- Has a special or particular quality such as oldest, best example, largest, or last surviving example of its kind;
- Is at least 100 years old and possesses substantial stratigraphic integrity; or
- Involves important research questions that historical research has shown can be answered only with archaeological methods.

Recognizing that historical resources often contain information that archival research cannot answer, there exists the potential for each resource to provide important information relevant to several theoretical and regional research questions. As part of the test plan, research questions concerning chronology, lithic technology, food procurement strategies, and trade and travel were addressed. Testing provided the necessary information to determine site size, depth, content, integrity, and potential to address important research questions.

4.5.3 ISSUE 1 – PREHISTORIC AND HISTORIC ARCHAEOLOGICAL SITES

Issue 1: Would the proposed project result in the alteration or destruction of a prehistoric or historic archaeological site or religious or sacred uses within the site?

IMPACTS ANALYSIS

Phase 2 Alignments

A total of 10 historical resources were identified within or adjacent to one or more of the Phase 2 project alignments. Five sites, CA-SDI 10185, CA-SDI-10963, CA-SDI-11424, CA-SDI-14083, and CA-SDI-14084, had a status of either partially unknown or significant. For site CA-SDI-11424, which was previously tested and identified as significant, extended testing to determine the extent of the western site boundary is recommended. If site CA-SDI-11424 extends within the project alignment, then mitigation of project impacts through the completion of a data recovery program, or avoidance through redesign, is recommended. For the three untested sites (CA-SDI-10963, CA-SDI-14083, and CA-SDI-14084 within or adjacent to the APE), which may have been destroyed by road development, monitoring during construction is recommended to determine site status. Site CA-SDI 10185 was mitigated in 1987. Five sites, CA-SDI-6941, CA-SDI-7208, CA-SDI-10188, CA-SDI-10197, CA-SDI-10511, were identified as not significant. However, project excavation and trenching may still have the potential to impact unknown resources at sites that have been identified as not significant; therefore, all sites located within the Phase 2 project alignment are recommended for monitoring during construction.

Phase 3 Alignments

A total of eight historical resources were identified during the record search and literature review for the Phase 3 alignment. These sites include CA-SDI-8053, CA-SDI-8064, CA-SDI-10748, CA-SDI-11215, CA-SDI-11216, CA-SDI-11673, CA-SDI-12229, and CA-SDI-12337. Additionally, another four resources (CA-SDI-7208, CA-SDI-10185, CA-SDI-10188, CA-SDI-10963) are located partially within Phase 3 and partially within the other Phase 2 alignments. These four historical resources sites have been accounted for in the discussion of Phase 2 Alignments above, because they would be partially impacted by the construction of the Phase 2 alignments. A field survey was not conducted on the eight sites because the Phase 3 alignment upgrades are projected to occur between 2020 and 2050. It is anticipated that future development in the east Otay Mesa area would affect the identified eight historical resources and that evaluation would occur with the processing of required CEQA environmental documentation for the future development projects. However, prior to the design of the Phase 3 improvements, these eight historical resources sites would require evaluation to determine if the Phase 3 improvements would impact these sites. This analysis would be conducted as part of the environmental document prepared for the Phase 3 alignment as part of this Program EIR. Therefore, a potentially significant impact to historical resources would occur.

SIGNIFICANCE OF IMPACT

Project excavation and trenching during the construction of Phase 2 facilities would have the potential to impact all sites identified during the record search, literature review, and site survey, which include one site identified as significant (CA-SDI-11424), three untested sites (CA-SDI-10963, CA-SDI-14083, and CA-SDI-14084), and five sites that were identified as not significant but may still contain unknown archaeological resources (CA-SDI-6941, CA-SDI-7208, CA-SDI-10188, CA-SDI-10197, CA-SDI-10511).

MITIGATION, MONITORING, AND REPORTING

Implementation of the following mitigation measures would reduce impacts to archaeological sites to below a level of significance.

Historical Resources – 1: Prior to the City's first preconstruction meeting, a testing and mitigation program for site CA-SDI-11424 shall be implemented to determine the western site boundary, based on CEQA, City of San Diego Historical Resource Guidelines, and the Otay Mesa Management Plan. For the portions of this site located within undeveloped land, surface collection should be used to determine the surface site boundaries and areas of artifact concentration in order to ascertain placement of test units and/or shovel test pits (STPs) and/or backhoe trenches. Excavation units (1x1-m) should be placed in those areas where ground stone, fire-altered rock, or a concentration of flaked material occurs. Backhoe trenching should be used at those sites where deep subsurface deposits (i.e., historic privies or dumps or subsurface prehistoric deposits) are possible. For any portion of this site located within developed land, a field visit to spot check the area, collection of surface artifacts, and a construction monitoring program shall be implemented. The test program shall include a literature/historic files review, mapping of any remaining structures, and backhoe trenching when applicable for determining the location of historical dumps.

Historical Resources – 2: Prior to the City's first pre-construction meeting a construction monitoring program shall be implemented for all known archeological sites located within the Phase 2 project alignment. These sites include CA-SDI 10185, CA-SDI-10963, CA-SDI-11424, CA-SDI-14083, CA-SDI-14084, CA-SDI-6941, CA-SDI-7208, CA-SDI-10188, CA-SDI-10197, and CA-SDI-10511. The following monitoring program shall be implemented:

I. Prior to Permit Issuance, Award of Contract or First Preconstruction Meeting

A. Land Development Review (LDR) Plan Check

1. Prior to permit issuance, or after award of the contract, but prior to the first preconstruction meeting, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring, if applicable, have been noted on the appropriate construction documents.

B. Letters of Qualification have been submitted to ADD

1. The applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project.
3. Prior to the start of work, the applicant must obtain approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation

- letter from South Coast Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
 3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.
- B. PI Shall Attend Precon Meetings**
1. Prior to beginning any work that requires monitoring, the Applicant shall arrange a Precon Meeting that shall include the PI, Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
 - a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.
 2. Acknowledgement of Responsibility for Curation (CIP or Other Public Projects)

The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.
 3. Identify Areas to be Monitored
 - a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.
 - b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).
 4. When Monitoring Will Occur
 - a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.
 - b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as: age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., that may reduce or increase the potential for resources to be present.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, services and all other appurtenances associated with underground utilities as identified on the AME. The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any construction activities.
2. The monitor shall document field activity via the Consultant Site Visit Record (CSVSR). The CSVSR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly, notification of monitoring completion, and in the case of ANY discoveries. The RE shall forward copies to MMC.

3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous trenching activities, presence of fossil formations, or when native soils are encountered may reduce or increase the potential for resources to be present.
- B. Discovery Notification Process
1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert trenching activities in the area of discovery and immediately notify the RE or BI, as appropriate.
 2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
 3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
- C. Determination of Significance
1. The PI and Native American representative, if applicable, shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.
 - a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.
 - b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval from MMC. For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D." Impacts to significant resources must be mitigated before ground disturbing activities in the area of discovery will be allowed to resume.
 - c. If resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.
 - (1) Note: For Pipeline Trenching Projects Only. If the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.
 - (2) Note: For Pipeline Trenching Projects Only. If significance can not be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.
- D. Discovery Process for Significant Resources - Pipeline Trenching Projects
- The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:
1. Procedures for documentation, curation and reporting
 - a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.
 - b. The PI shall prepare a Draft Monitoring Report and submit to MMC as indicated in Section VI-A.
 - c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered

during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.

- d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and the following procedures set forth in the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS).
2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.
2. The Medical Examiner, in consultation with the PI, shall determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner shall determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American

1. The Medical Examiner shall notify the Native American Heritage Commission (NAHC). By law, **ONLY** the Medical Examiner can make this call.
2. The NAHC shall contact the PI within 24 hours or sooner, after Medical Examiner has completed coordination.
3. NAHC shall identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information..
4. The PI shall coordinate with the MLD for additional consultation.
5. Disposition of Native American Human Remains shall be determined between the MLD and the PI, IF:
 - a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 24 hours after being notified by the Commission; OR;
 - b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner.

D. If Human Remains are **NOT** Native American

1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.

2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant department and/or Real Estate Assets Department (READ) and the Museum of Man.

V. Night Work

- A. If night work is included in the contract
 1. When night work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
 2. The following procedures shall be followed.
 - a. No Discoveries
In the event that no discoveries were encountered during night work, The PI shall record the information on the CSVr and submit to MMC via fax by 9am the following morning, if possible.
 - b. Discoveries
All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains.
 - c. Potentially Significant Discoveries
If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction shall be followed.
 - d. The PI shall immediately contact MMC, or by 8AM the following morning to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.
- B. If night work becomes necessary during the course of construction
 1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.
 2. The RE, or BI, as appropriate, shall notify MMC immediately.
- C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

- A. Completion of Monitoring Program and Submittal of Draft Monitoring Report
 1. The PI shall submit two copies of the Draft Monitoring Report (even if negative) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC for review and approval within 90-days following the completion of monitoring.
 - a. For significant archaeological resources encountered during monitoring, the Archaeological Data Recovery Program or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.
 - b. MMC shall return the Draft Monitoring Report to the PI for revision or, for preparation of the Final Report.
 - c. Recording Sites with State of California Department of Parks and Recreation
The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially

significant resources encountered during the Archaeological Monitoring Program in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.

- d. MMC shall notify the RE or BI, as appropriate, of receipt of the Draft Monitoring Report.
2. Handling of Artifacts
 - a. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued
 - b. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.
3. Curation of artifacts: Deed of Gift and Acceptance Verification
 - a. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with EAS and the Native American representative, as applicable.
 - b. The PI shall submit the Deed of Gift and catalogue record(s) to MMC for signature by the RE or BI, as appropriate.
 - c. The RE or BI, as appropriate shall obtain signature on Deed of Gift and shall return to MMC.
 - d. MMC shall return the signed Deed of Gift to the PI.
 - e. The PI shall include the Acceptance Verification from the curation institution to MMC with submittal of the Final Monitoring Report.
- B. Final Monitoring Report(s)
 1. The PI shall submit two copies of the Final Monitoring Report to MMC (even if negative), within 90-days after approval of the draft report, which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics).
 2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

4.6 AIR QUALITY

This section of the EIR is based on the *Air Quality Impact Analysis for the Otay Mesa Truck Sewer Project, City of San Diego, California* (June 2004) prepared by Giroux & Associates. The report, provided in Appendix D, addresses pollutant emissions as a result of project construction and operation and diesel air toxic risks arising from project construction activities.

4.6.1 EXISTING CONDITIONS

CLIMATE

The climate of San Diego is characterized by a repetitive pattern of frequent early morning cloudiness, hazy afternoon sunshine, daytime onshore breezes, and limited temperature change throughout the year. The prevailing winds and weather are tempered by the Pacific Ocean, resulting in cooler summers and warmer winters in comparison with other places along the same general latitude. Dry easterly winds sometimes blow in the vicinity for several days at a time. As these hot winds are predominant in the fall, highest temperatures occur in the months of September and October. Strong winds and gales associated with Pacific, or tropical, storms are infrequent due to latitude. Average rainfall is 10 inches per year, falling mainly in November through March. Substantial year-to-year variations in rainfall amounts are typical, with rainfall amounts of one-half or twice the annual average not uncommon.

METEOROLOGY

Meteorological conditions in San Diego conform well to the regional pattern of strong diurnal onshore winds during summer and weak nocturnal offshore winds during winter. These local wind patterns are driven by the temperature difference between the cool ocean and the warm interior. During summer, moderate breezes of 8 to 12 mph blow onshore by day, and may continue throughout the night, as the land remains warmer than the ocean. During winter, the onshore flow is weaker, and reverses in the evening as the land becomes cooler than the ocean.

Daytime onshore winds and the nocturnal land breezes are accomplished by characteristic temperature inversions that control the vertical depth through which air pollutants can be mixed. The strong onshore flow undercuts a deep layer of warm sinking air within the Pacific Ocean high pressure cell. The interface between the cool layer near the ground and the warm layer aloft is a boundary where normal decrease of temperature with height is reserved (an inversion). As the polluted layer moves to topographically higher inland areas, the height of the inversion remains relatively the same and thus, becomes more concentrated.

During winter nights, the air near the ground cools from contact with the radiating ground surface, while the air aloft remains warm. The radiation inversion is very shallow and localized, and occurs in conjunction with nearly calm winds. The shallow vertical barrier and light horizontal transport lead to a marked stagnation of air emissions from localized sources such as freeways, large parking lots, and major intersections. Such microscale "hot spots" associated with cool-season radiation inversions are less pervasive and less severe, than the regional photochemical air pollution that occurs in conjunction with the regional, warm-season marine/subsidence inversions.

REGULATORY FRAMEWORK

The following is a summary of the relevant plans and policies with regulatory authority over the proposed project.

FEDERAL CLEAN AIR ACT

The Clean Air Act (CAA), which was most recently amended in 1990, requires the United States Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQSs) for pollutants deemed harmful to public health and the environment. Primary standards set limits ("criteria") to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. NAAQSs have been set for seven "criteria" air pollutants: ozone (O₃), respirable particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), fine particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and lead (Pb). These criteria air pollutants and the currently applicable NAAQSs for each are presented in Table 4.6-1.

Table 4.6-1 includes the most recently (1997) adopted federal standards for chronic (8-hour) ozone exposure or for PM_{2.5}. Implementation of these standards had been put on hold through an order issued by the U.S. Circuit Court of Appeals. That stay was appealed to the U.S. Supreme Court. In a unanimous decision, the Supreme Court ruled in February 2001, that the U.S. Environmental Protection Agency (EPA) did indeed have the proper authority to adopt national clean air standards, and that a cost-benefit analysis need not accompany such new rules. However, the Court ruled that attainment schedules for new standards were inconsistent, and that new schedules must be prepared. EPA signed a consent decree in November 2002, to revise the attainment designation for a variety of air basins that meet the 1-hour federal ozone standard, but exceed the "new" (1997) 8-hour standard. The frequency of violations of the 1-hour ozone standard is close to zero in San Diego County. The APCD initiated a request to redesignate the SDAB as "attainment" for the 1-hour federal standard. The air basin was reclassified as a "maintenance area" for the federal 1-hour ozone standard in 2003. However, the 8-hour ozone standard is still frequently violated at the APCD Alpine monitoring station. The EPA action with regard to the 8-hour standard non-attainment designation will have only a limited effect on air quality attainment planning in the region. Whereas planning for the hourly standard will focus on maintenance, the regional non-attainment plan will shift its focus to ultimately also meeting the 8-hour standard.

The EPA has also developed classifications for distinct geographic regions known as air basins. Under these classifications, for each "criteria" pollutant, each air basin (or portion of an air basin, known as a planning area) is classified as "attainment" if the air basin or planning area has "attained" compliance with (that is, monitored air pollution levels have not exceeded) the NAAQS for that pollutant. If the levels of ambient air pollution exceed the NAAQS for that pollutant, the air basin (or planning area) is classified as "non-attainment." Air basins, which have not received sufficient analysis for certain "criteria" air pollutants, are designated as "unclassified" for those particular air pollutants.

CALIFORNIA AIR RESOURCES BOARD

The Clean Air Act, as amended, also permits states to adopt additional or more protective air quality standards. The California Air Resources Board (CARB), part of the California Environmental Protection Agency (CalEPA), is the state agency to which EPA has delegated primary responsibility for implementation of those portions of the CAA, as amended, which entail the day-to-day regulatory functions and contacts with facilities which emit air pollutants within California. The CARB has also set ambient air quality standards, known as the California Ambient Air Quality Standards (CAAQSs). For certain air pollutants, such as particulate matter and ozone, the CAAQSs are more restrictive than the respective NAAQSs. The CARB has also set ambient air quality standards for additional air pollutants that are not addressed by the NAAQSs, namely hydrogen sulfide (H₂S), vinyl chloride, sulfates (SO₄²⁻), and visibility-reducing particles. A list of these California "criteria" air pollutants and the currently applicable CAAQSs are also listed in Table 4.6-1.

Table 4.6-1. Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards ¹	Federal Standards ²	
		Concentration	Primary ³	Secondary ⁴
Ozone (O ₃)	1 Hour	0.09 ppm (160 µg/m ³)	0.12 ppm (235 µg/m ³)	Same as Primary Standards
	8 Hour	--	0.08 ppm (157 µg/m ³)	
Respirable Particulate Matter (PM ₁₀)	24 Hour	50 µg/m ³	150 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	20 µg/m ³	50 µg/m ³	
Fine Particulate Matter (PM _{2.5})	24 Hour	No Separate State Standard	65 µg/m ³	Same as Primary Standards
	Annual Arithmetic Mean	12 µg/m ³	15 µg/m ³	
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	None
	1 Hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	--	0.053 ppm (100 µg/m ³)	Same as Primary Standard
	1 Hour	0.25 ppm (470 mg/m ³)	--	
Sulfur Dioxide (SO ₂)	Annual Arithmetic Mean	--	0.030 ppm (80 µg/m ³)	--
	24 Hour	0.04 ppm (105 µg/m ³)	0.14 ppm (365 µg/m ³)	--
	3 Hour	--	--	0.5 ppm (1300 µg/m ³)
	1 Hour	0.25 ppm (655 µg/m ³)	--	--
Lead	30 Day Average	1.5 µg/m ³	--	--
	Calendar Quarter	--	1.5 µg/m ³	Same as Primary Standard
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer - visibility of ten miles or more due to particles.	No Federal Standards	
Sulfates	24 Hour	25 µg/m ³	No Federal Standards	
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	No Federal Standards	
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m ³)	No Federal Standards	

¹ California Standards for ozone, carbon monoxide, sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter- PM₁₀, PM_{2.5}, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equal or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

² National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. For the PM_{2.5}, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

³ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

⁴ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

After further review of the relationship between fine particulate matter and human health effects, the California Air Resources Board adopted a new State standard for PM_{2.5} that is more stringent than the federal standards. These standards were adopted June 20, 2002. The State PM_{2.5} standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard. Widespread violations of the more stringent State PM_{2.5} standard will, however, be a constant reminder that major progress needs to be made to protect the health of citizens most sensitive to small-diameter particulate pollution.

California Health and Safety Code section 39607(e) requires the Air Resources Board to establish and periodically review area designation criteria. These designation criteria provide the basis for the Board to designate areas of the state as "attainment," "nonattainment," or "unclassified" for the CAAQSS.

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) are also responsible for the determination if a substance should be formally identified as a toxic air contaminant (TAC) in California. Several of the components of diesel engine exhaust, including the particulate emissions from diesel-fueled engines, have been listed by CARB as toxic air contaminants, or are recognized by CARB or OEHHA as toxic air pollutants.

SAN DIEGO AIR POLLUTION CONTROL DISTRICT

Pursuant to Section 40002 of the California Health and Safety Code, jurisdiction for air quality and regulation of air pollutant emissions from all stationary sources (that is, other than motor vehicles) within San Diego County has been delegated to the San Diego Air Pollution Control District (SDAPCD). SDAPCD has adopted rules and regulations to implement this delegated authority and regulate the emission of air pollutants and achieve and maintain good air quality within the county.

EXISTING AIR QUALITY

The SDAPCD operates ten air quality monitoring stations that measure ambient air pollutant concentrations within the SDAB. The ambient air quality monitoring station located nearest to the proposed project area is the Otay Mesa Paseo International Station. This station monitors all pollutants except PM_{2.5}. Monitoring data for PM_{2.5} was obtained from the Chula Vista Station. Table 4.6-2 summarizes the last five years of monitoring data available from the Otay Mesa and the Chula Vista stations.

There was one violation of national standards in the last five years (one violation per year is allowed under federal guidelines). The more stringent State standard for ozone was occasionally exceeded and the state standard for PM₁₀ was more frequently violated. Ozone, and to some extent particulates, are pollutants whose precursors are generated elsewhere and then carried into the local area by prevailing wind patterns. Levels of carbon monoxide or nitrogen oxides, which are more indicative of local source/receptor relationships, are seen in Table 4.6-2 to be very low in the proposed project area.

With only two violations of the federal 1-hour ozone standard in the region in the 4 years (1999-2002), the SDAPCD has initiated a request for redesignation of the basin as "attainment" for the 1-hour standard. The 8-hour ozone standard is, however, exceeded more frequently. On April 15, 2004, the San Diego Air Basin was designated as a "non-attainment" area for the 8-hour federal standard by the EPA. Therefore, the attainment plan will continue to contain emissions reduction programs to achieve the 8-hour standard now that the 1-hour standard has been met.

Table 4.6-2. Air Quality Monitoring Summary
 (Number of Days Standards Were Exceeded and Maxima For Periods Indicated)
 (Entries shown as ratios = samples exceeding standard/samples taken)

Pollutant/Standard	1999	2000	2001	2000	2001
Ozone⁽¹⁾					
1-Hour > 0.09 ppm ^(a)	1	0	0	2	1
1-Hour > 0.12 ppm ^(b)	0	0	0	0	0
8-Hour > 0.08 ppm ^(c)	0	0	0	1	0
Max 1-Hour Conc. (ppm)	0.10	0.08	0.09	0.11	0.10
Carbon Monoxide⁽¹⁾					
1-Hour > 20 ppm ^(a)	0	0	0	0	0
8-Hour > 9 ppm ^(a,b)	0	0	0	0	0
Max 1-Hour Conc. (ppm)	9.0	9.0	6.0	8.0	7.0
Max 8-Hour Conc. (ppm)	4.9	5.9	3.9	4.7	4.9
Nitrogen Dioxide⁽¹⁾					
1-Hour > 0.25 ppm ^(a)	0	0	0	0	0
Max 1-Hour Conc. (ppm)	0.17	0.11	0.15	0.13	0.15
Respirable Particulates (PM₁₀)⁽¹⁾					
24-Hour > 50 (µg/m ³) ^(a)	21/55	19/61	22/60	29/61	24/58
24-Hour > 150 (µg/m ³) ^(b)	0/55	0/61	0/60	0/61	0/58
Max. 24-Hr. Conc. (µg/m ³)	121.0	139.0	107.0	131.0	133.0
Ultra-Fine Particulates (PM_{2.5})⁽²⁾					
24-Hour > 65 (µg/m ³) ^(b)	0/103	0/101	0/109	0/-	0/-
Max. 24-Hour Conc. (µg/m ³)	47.1	40.5	41.0	41.0	239.2*

^(a) State AAQS

^(b) National AAQS

⁽¹⁾ Otay Mesa-Paseo International Monitoring Station

⁽²⁾ Chula Vista Monitoring Station

* During October 2003 Wildfires

- = No data available

Source: San Diego Air Pollution Control District.

SOURCES OF POLLUTION

Nitrogen oxides (NO_x) and reactive organic gases (ROG) are the two precursors to photochemical smog formation. In San Diego County, 53-percent of the 205 tons per day of ROG emitted comes from mobile (cars, ships, planes, heavy equipment, etc.) sources. For NO_x, 90-percent of the 221 tons emitted daily are from mobile sources (California ARB, 2003). Computer modeling of smog formation has shown that attainment of the federal ozone standard is possible at these emission levels on days when there is no substantial transport of pollution from the South Coast Air Basin or other airshed. As noted above, the federal one-hour ozone standard has been met at all basin-wide air monitoring stations since 1999.

4.6.2 IMPACT SIGNIFICANCE CRITERIA

CONSTRUCTION AND OPERATIONAL EMISSION THRESHOLDS

Project air quality impacts would be considered significant under CEQA if they would:

1. Cause violations of clean air standards;
2. Substantially increase existing violations or
3. Constitute exposure of air contaminants for which there is no known safe level.

The City of San Diego CEQA Significance Thresholds (2001) identify maximum emissions levels for air pollutants as follows:

- CO: 550 pounds per day
- ROG: 55 pounds per day
- NO₂: 250 pounds per day
- SO₂: 250 pounds per day
- PM₁₀: 100 pounds per day

Impact significance in the thresholds focuses on project operational activity impacts. However, PM₁₀ emissions from construction activities are specifically referenced as a source of potential impact. Temporary construction equipment exhaust emissions are not identified as emissions sources that should be analyzed relative to the same standards. However, because such activities may contribute ozone-forming pollutants in an ozone non-attainment air basin, the above significance screening criteria were applied to construction equipment exhaust emissions as well.

AIR TOXIC RISKS THRESHOLDS

Air toxic significance criteria are suggested by SDAPCD Rule 210 (Air Contaminant Public Health Risks - Public Notification and Risk Reduction), Section (d) (Public Health Risk Notification Requirements), which requires public notification if the incremental cancer risk or the acute or chronic non-cancer risks are equal to or exceed specified thresholds. Using this approach, the proposed project would be deemed to have a significant effect on the environment if the projected air toxic risks from the proposed project were to exceed one or more of the following thresholds:

- The maximum incremental cancer risk is equal to or greater than 10 in one million.
- The total acute non-cancer health hazard index is equal to or greater than 1.0.
- The total chronic non-cancer health hazard index is equal to or greater than 1.0.

The definitions for cancer risk, acute non-cancer health hazard index and chronic non-cancer health hazard index are provided below.

- **Cancer Risk:** The theoretical probability of contracting cancer when continually exposed for a lifetime (70 years) to a given concentration of a substance. The probability is usually calculated as an upper confidence limit. The maximum estimated risk may be presented as the number of chances in a million of contracting cancer.

- **Acute Non-Cancer Hazard Index:** The potential non-cancer health impacts resulting from a one-hour exposure to toxic substances. The total hazard index includes the sum of hazard indices for pollutants with non-cancer health effects that have the same or similar adverse health effects (endpoints). An acute hazard index is calculated by dividing the one-hour concentration of a toxic pollutant by the acute reference exposure level for that pollutant.
- **Chronic Non-Cancer Hazard Index:** The potential non-cancer health impacts resulting from exposure to toxic substances usually lasting from one year to a lifetime. The total hazard index includes the sum of hazard indices for pollutants with non-cancer health effects that have the same or similar adverse health effects (endpoints). A chronic hazard index is calculated by dividing the annual average concentration of a toxic pollutant by the chronic reference exposure level for that pollutant.

4.6.3 ISSUE 1 – POLLUTANT EMISSIONS

Issue 1: Would the proposal result in construction or operational air pollutant emissions that exceed the significance thresholds?

IMPACT ANALYSIS

The Air Quality Impact Analysis Report (Giroux & Associates 2004) analyzed the air quality impacts associated with the construction of Phase 2 (including Phases 2A1, 2A2, 2B1, 2B2, 2B3, 2D, 2E, and 2F). The report did not address Phase 2C, because pipeline alignments and future pump station locations have not been determined for this phase. The report did not address Phase 3 because the anticipated construction date for the pipeline upgrade would be between 2020 and 2050. Therefore, current air quality data would not be relevant for the future construction of Phase 3. In order to determine construction activity pollutant emissions, for purposes of analysis and as a worst-case scenario, it is presumed that the construction of Phases 2D and 2E would occur simultaneously for 12 months, with Phase 2E continuing for an additional 6 months once Phase 2D is completed.

POLLUTANT EMISSIONS FROM CONSTRUCTION ACTIVITIES

Construction activities associated with the proposed project would result in diesel emissions from the use of diesel-powered construction equipment and fugitive dust from dozing/ripping, loader/excavator transfer to haul trucks (materials handling), truck haul (round trip) on unpaved roads on site, haul road maintenance grading, wind erosion, and truck haul (round trip) on paved roads. A significant air quality impact would occur if the construction emissions from the proposed project would exceed the daily emissions thresholds for CO, ROG, NO₂, SO₂, and PM₁₀. Table 4.6-3 identifies the equipment fleet that is anticipated to be utilized during project construction. This table provides the basis for estimating maximum daily equipment exhaust emissions. The equipment inventory in Table 4.6-3 was combined with the average horsepower and load factors to create an estimate of daily equipment use as shown in Table 4.6-4. Since Phases 2C and 3 have not been analyzed for pollutant emissions levels that exceed significance thresholds, it is assumed that Phases 2C and 3 would have the potential to result in a significant air quality impact.

Diesel Emissions

Pollutants from a diesel engine are a result of such processes as incomplete combustion of the fuel/air mixture, reactions of other components in the combustion chamber, the combustion of oil or oil additives and combustion of non-organic components in diesel fuel such as sulfur. The main diesel pollutants for which emissions thresholds have been set include ROG, NO_x, CO, SO₂, and PM₁₀.

Table 4.6-3. Estimated Construction Equipment Hours of Operation

Type of Equipment	Est. # On Site	Est. Max. Hrs of Daily Operation	Hours of Operation	Location of Operation
Pick-up Truck	4	4	0700-1800	Along new pipe alignment
Generator	1	6	0700-1700	Along new pipe alignment
Excavator	1	8	0600-1700	Along new pipe alignment
Wheel Loader	1	8	0600-1700	Along new pipe alignment and Staging Areas
Ten Wheel Dump Truck	2	8	0700-1700	Along new pipe alignment and Staging Areas
Water Truck	1	8	0700-1700	Along new pipe alignment
Truck and Transfer	1	2	0700-1700	Along new pipe alignment
Boom Truck	1	6	0700-1700	Along new pipe alignment
Concrete Truck	1	4	0700-1700	Along new pipe alignment
40-Foot Flatbed Truck	1	2	0700-1700	Along new pipe alignment
Motor Grader	1	8	0600-1700	Along new pipe alignment
Skip Loader	2	8	0600-1700	Along new pipe alignment
Vibratory Roller	1	8	0600-1700	Along new pipe alignment
Dewatering Pump	2	24	24 hours	Along new pipe alignment
Jackhammer and Air Compressor	1	8	0700-1700	Along Exist. Trunk Sewer
Slurry Separator	1	8	0600-1700	Tunneling only
600 kW Generator	1	8	0600-1700	Tunneling only
140-ton Crane	1	4	0600-1700	Pump Station Site
65-ton Crane	1	4	0600-1700	Pump Station Site
22-ton Crane	1	4	0600-1700	Pump Station Site
Forklift	1	8	0600-1700	Along new pipe alignment
Backhoe	2	8	0600-1700	Along new pipe alignment

Table 4.6-4. Off-Road Equipment Usage

Equipment	HP at 100% Load	Hours of Operation	Load Factor (%)	Daily HP-HR
Generators	22	14	74	228
Excavator	152	8	58	705
Wheel Loader	147	8	46	541
Motor Grader	157	8	58	728
Skip Loaders	79	16	46	581
Roller	99	8	58	459
Dewatering Pumps	23	48	74	817
Air Compressor	37	8	48	142
Slurry Separator	60	8	70	336
Cranes	194	12	43	1,001
Forklift	83	8	30	199
Backhoe	83	16	40	531
Total				6,268

Off-road equipment emissions were combined with on-road truck exhaust from the export of excess dirt, heavy trucks transporting materials and worker-related trips. Phases 2E and 2F under simultaneous construction (worst-case) are forecast to generate 186 average daily trips. A worst-case day was presumed to create twice the daily average truck traffic, or 372 trips of 10 miles average length (3,720 vehicle miles traveled). Calculated equipment emissions are presented in Table 4.6-5.

Table 4.6-5. Diesel Emissions for Project Construction Activities

Activity	ROG	NO _x	CO	SO ₂	PM ₁₀
Off-Road Equipment	3	49	11	3	2
On-Road Trucks	3	28	21	<1	1
Employee Commuting	2	2	15	<1	<1
Total	8	79	47	3	3
Threshold - lb/day	55	250	550	250	100

According to Table 4.6-5, the anticipated daily diesel emissions during the construction would be 8 lbs/day ROG, 79 lbs/day NO_x, 47 lbs/day CO, 3 lbs/day SO₂, and 3 lbs/day PM₁₀. Total project construction emissions would be below the threshold levels, and would not significantly impact air quality. In addition, the mobile nature of the onsite construction equipment and offsite trucks would likely prevent any localized violation of the NO_x or other standards. There would be isolated instances when the characteristic diesel exhaust odor is noticeable from passing trucks or nearby heavy equipment; however, such transitory exposure is a brief nuisance and would not threaten air quality standards. Therefore, the impacts associated with emissions from construction equipment activity and employees commuting are less than significant for ROG, NO_x, CO, SO₂, and PM₁₀.

Fugitive Dust

Fugitive dust means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of man. Although fugitive dust includes particulates of various sizes, the only regulated criteria emission of fugitive dust is PM₁₀ (particulate matter less than 10 microns).

Phase 2 of the proposed project consists of approximately 8.5 miles of linear facilities and approximately 2.8 to 4.5 acres for proposed pump stations. The construction of the pipelines and pump stations would be phased according to necessity and development in the area. While the linear facilities and pump stations may be under simultaneous disturbance and/or construction, the entire mileage and acreage of the pipelines would not be excavated simultaneously. Most construction phases would be sequential. Table 4.6-6 identifies the estimated average rate of progress, daily truck traffic to remove spoils and import fill, pipe and other materials, and daily excavation quantities for an average month, assuming 20 workdays.

The maximum daily activity is assumed to be twice the daily average progress per day. Some activities would entail more excavation, some would have greater rates of daily progress, and some would involve greater truck traffic. Most phases would not occur simultaneously except that the construction of Phases 2D and 2E, which would have the potential to occur simultaneously for approximately 12 months, with Phase 2E continuing on for another 6 months after Phase 2D is completed.

Table 4.6-6. Daily Progress, Trucks, and Excavation Amounts for Project Phases

Phase	Progress per day (feet)	Trucks per day	Excavation per day (yd ³)
2A1	38	72	417
2A2	52	73	300
2B1	27	67	182
2B2	40	72	88
2D	31	44	50
2E	23	142	164
2F	N/A	Unknown	Unknown

Source: Giroux & Associates, 2004

The average daily disturbance “footprint” for linear facilities was calculated by assuming three sections are under daily disturbance to excavate, lay pipe and backfill/repave. A disturbance corridor of 20 feet in width was assumed. To account for differences in pipeline depth, an emissions factor of 0.04 pounds of PM₁₀ per cubic yard of dirt excavated/handled was added to the “default” fugitive dust surface disturbance factor of 10 pounds per acre. The assumed worst-case grading footprint for the Pump Station A1 site in Phase 2E is 4.5 acres. The resulting daily PM₁₀ emissions for a maximum activity day in each phase of construction relative to the 100 lb/day significance threshold are provided in Table 4.6-7.

As shown in Table 4.6-7, worst-case PM₁₀ emissions would occur during the construction of Phase 2F, which would result in 45.0 pounds of PM₁₀ per day. The simultaneous construction of Phases 2E and 2F would have lower combined daily PM₁₀ emissions than the PM₁₀ emissions from construction of Phase 2F. None of the project construction phases would exceed the emissions threshold of 100 pounds per day for PM₁₀. Therefore, air quality impacts associated with PM₁₀ would be less than significant.

Table 4.6-7. Daily PM₁₀ Emissions for a Maximum Activity Day

Phase	Pipeline Disturbance Area ^a (acres)	Emissions (lb/day)	Excavation Quantities (yd ³ /day)	Emissions (lb/day)	Total Emissions (lb/day)
2A1	0.105	1.1	834	33.4	34.5
2A2	0.143	1.4	600	24.0	25.4
2B1	0.074	0.7	364	14.6	15.3
2B2	0.110	1.1	176	7.0	8.1
2B3	N/A	N/A	N/A	N/A	N/A
2C	N/A	N/A	N/A	N/A	N/A
2D	0.085	0.9	100	4.0	4.9
2E	0.063	0.6	328	13.1	13.7
2F	4.5 ^b	45.0	Unknown	Unknown	45.0
3	N/A	N/A	N/A	N/A	N/A

^aMaximum progress x 3 x 20 feet wide ÷ 43,560 ft²/ac.^bAssuming that the entire A1 site is under simultaneous disturbance.

Source: Giroux & Associates, 2004

Current research in particulate exposure health effects suggests that the most adverse effect derives from ultra-small diameter particulate matter comprised of chemically reactive pollutants such as sulfates, nitrates or organic material. A new national clean air standard for particulate matter of 2.5 microns or smaller in diameter (called PM_{2.5}) was adopted in 1997. Very little construction activity particulate matter is in the PM_{2.5} range. Soil dust is also more chemically benign than typical urban atmospheric PM_{2.5}. The limited amount of PM_{2.5} within the PM₁₀ burden, especially when BACMs are used, further reinforces the finding of a less than significant impact.

In addition to fine particles that remain suspended in the atmosphere semi-indefinitely, construction activities generate many larger particles with shorter atmospheric residence times. This dust is comprised mainly of large diameter inert silicates that are chemically non-reactive and are further readily filtered out by human breathing passages. These fugitive dust particles are therefore more a potential soiling nuisance as they settle out on parked cars, outdoor furniture, or landscape foliage than they are an adverse health hazard. Any nuisance potential would tend to be highly localized when construction activities occur in very close proximity to residences or businesses.

Dust deposition on plants and landscaping could affect pollution-sensitive biological species that use the habitat for food, cover or other purposes. However, the primary zone of substantial construction dust deposition is stated by the USEPA (1995) to be within of a construction disturbance area. For pipeline construction projects within existing roadway alignments, or for cleared/grubbed areas around pump stations, any existing bio-habitats are well outside the zone of possible dust deposition influence.

POLLUTANT EMISSIONS FROM OPERATIONAL ACTIVITIES

Odor Control Systems

Wastewater conveyance systems have no operational air quality impact potential except at pump stations. Pump stations may be vented to the atmosphere, which can cause odor if the sewage does not move properly through the system. Larger pump stations are typically equipped with odor control systems involving chemical scrubbers. The treated exhaust may contain small quantities of air pollution. Odor control systems are designed to trap odorous materials within a medium such as activated carbon, or to precipitate the odorant into a water stream that is sewerred. Air emissions from odor control systems are negligible. Odor control systems are designed to remove odorants such as hydrogen sulfide down to less than one part per million (ppm). Table 4.6-8 provides estimated daily emissions of hydrogen sulfide that would be produced in scrubbed exhaust using wet chemical scrubbers. This table assumes that an odor control exhaust rate of 1,000 cubic feet per minute (CFM) would treat approximately one million gallons of sewage per day.

Table 4.6-8. Emission Levels of Hydrogen Sulfide Produced at Pump Station A1

Capacity	Exhaust Rate (CFM)	H ₂ S (lbs/day)
8 MGD	8,000 CFM scrubber	1.0 lb/day H ₂ S
12 MGD	12,000 CFM scrubber	1.5 lb/day H ₂ S
35 MGD	35,000 CFM scrubber	4.3 lb/day H ₂ S

Source: Giroux & Associates, 2004

The emission rates identified in Table 4.6-8 could be further reduced by using activated carbon which is another ten-fold more efficient than wet-chemical odor control systems.

In addition, pump stations may be vented into the atmosphere, which can cause odor if the sewage does not move properly through the system. As a result, larger pump stations are equipped with odor control systems designed to trap the odorous materials within a medium such as activated carbon, or they precipitate the odorant into a water stream that is sewered. Additionally, the Metropolitan Wastewater Department requires that all projects be designed to comply with the City's Odor Control Design Guidelines (December 1996), which would ensure that sewer odor impacts are minimized. Therefore, mitigation for odor would not be required.

Emergency Generators

Proposed Pump Station A1 would be equipped with backup emergency power to prevent sewage backup within the system during a power outage. Diesel-powered generators would be utilized for such standby electrical power needs. The generators would be tested for limited periods of time to lubricate internal parts and to verify their ability to start when needed. The size of the emergency generators would vary with the size of the pump station. Table 4.6-9 identifies the necessary emergency electrical power that would be required for each expansion of proposed Pump Station A1

Table 4.6-9. Emergency Electrical Power Requirements for Pump Station A1

Project Phase	Capacity (MGD)	Required Power (kW)
Phase 2E	8 MGD capacity	1,000 kW
Phase 2F	12 MGD capacity	1,500 kW
Phase 3	35 MGD capacity	5,000 kW

Source: Giroux & Associates, 2004

Emissions calculations for the pump station emergency generators are estimated using a 20-minute per month testing period and a 4-hour power outage, based upon the Caterpillar 12CM32C engine as a typical emergency generator driver. Emissions calculations are presented in Table 4.6-10.

Significance thresholds would not be exceeded for the emergency generators at the 8 MGD or 12 MGD pump station. Thresholds would only be exceeded when the pump station achieves full build-out of 35 MGD and there is an extended power outage. A power outage of longer than 2.4 hours per day could cause more than 250 pounds of NO_x to be generated with current generation technology and a large (5 MW) emergency generation. Any such possibility is speculative because the pump station may never reach 35 MGD capacity. In addition, the assumed generator may be oversized. However, a potentially significant impact may still occur if the emergency generators for the 35 MGD pump station were to operate for longer than 2.4 hours per day.

Table 4.6-10. Emissions from Emergency Generators at Pump Station A1

Pump Station Capacity	Emissions (lbs/day)		
	NO _x	CO	PM ₁₀
8 MGD Capacity			
Monthly test	6.9	0.2	<0.1
Power Outage	82.5	2.1	0.1
12 MGD Capacity			
Monthly test	10.3	0.3	<0.1
Power Outage	123.7	3.2	0.1
35 MGD Capacity			
Monthly test	34.4	0.9	<0.1
Power Outage	412.5	10.7	0.3
Significance Threshold	250.0	550.0	100.0

Source: Giroux & Associates, 2004

SIGNIFICANCE OF IMPACT

Construction and operation of Phase 2C, and construction of Phase 3, would also have the potential to result in air pollutant emissions that exceed significance thresholds. A potentially significant impact may occur if the emergency generators for the 35 MGD pump station were to operate for longer than 2.4 hours per day. Although phases 2A1, 2A2, 2B1, 2B2, 2D, 2E and 2F of the proposed project would not result in a significant air quality impact from project construction, a mitigation measure is proposed to further reduce pollutant emissions during construction.

MITIGATION, MONITORING, AND REPORTING

Air Quality – 1: When pipeline alignments and pump station location(s) have been determined for Phase 2C, an air quality technical report shall be prepared by a qualified individual that identifies whether construction or operational activities associated with Phase 2C pipelines and pump stations would generate pollutant emissions which exceed significance thresholds. If significance thresholds would be exceeded, pollutant emission reduction measures shall be implemented to reduce impacts to below a level of significance.

Air Quality – 2: Prior to the City's first preconstruction meeting for the construction of Phase 3, an air quality technical report shall be prepared by a qualified individual that identifies whether construction activities associated with Phase 3 pipeline installation would generate pollutant emissions which exceed significance thresholds. If significance thresholds would be exceeded for construction activities, pollutant emission reduction measures shall be implemented to reduce impacts to below a level of significance.

Air Quality – 3: Prior to the City's first preconstruction meeting for the construction of the 35 MGD pump station, an air quality emissions analysis shall be conducted by a qualified individual to determine if the emergency generators proposed for the pump station backup power would exceed allowable emissions thresholds. If such an exceedance would occur, measures shall be implemented to reduce impacts to below a level of significance.

Air Quality – 4: Prior to the City's first preconstruction meeting, the project engineer shall identify one or more of the following mitigation measures on the appropriate grading plans which shall be implemented during all phases of construction for the proposed project:

1. Limit the disturbance "footprint" to as small an area as practical.
2. Water all active construction areas at least twice daily.
3. Cover all off-site haul trucks or maintain at least two feet of freeboard.
4. Pave or apply water four times daily to all unpaved parking or staging areas.
5. Sweep or wash any site access points within 30 minutes of any visible dirt deposition on any public roadway.
6. Cover or water twice daily any on-site stockpiles of debris, dirt or other dusty material.
7. Suspend all operations on any unpaved surface if winds exceed 25 mph.
8. Hydroseed or otherwise stabilize any cleared area which is to remain inactive for more than 96 hours after clearing is completed.
9. Require 90-day low- NO_x tune-ups for off-road equipment.
10. Encourage carpooling for construction workers.
11. Limit lane closures to off-peak travel periods.
12. Park construction vehicles off traveled roadways.
13. Wet down or cover dirt hauled off site.
14. Wash or sweep access points daily.
15. Encourage receipt of materials during non-peak traffic hours.
16. Sandbag construction sites for erosion control.

4.6.4 ISSUE 2 – DIESEL AIR TOXICS HEALTH RISK

Issue 2: *Would the proposal have a significant effect on human health or the environment as a result of diesel emissions during construction?*

IMPACT ANALYSIS

Diesel-powered construction equipment releases exhaust particulates (soot) that have been identified as carcinogenic in a number of health studies. No specific methodology exists to convert the toxic fraction of diesel equipment exhaust into a corresponding health risk. Construction activity for the project would generate a maximum of 4 pounds per day of combustion PM₁₀ per day for construction activity.

The cancer risk factor for diesel exhaust is expressed in terms of outdoor exposure for 24 hours per day, 365 days per year, for the next 70 years. These are not conditions that would occur around a pipeline project, because construction activities are temporary and would not result in such long durations of exposure. The equipment exhaust would be released for a limited time during daytime hours; however, moderate winds and/or turbulence by mobile sources would prevent any individual receptor from being exposed for extended periods. In addition, the construction would vary in location as the pipeline is installed. As a result, no sensitive receptors would be exposed for the entire duration of the construction activity. Diesel exposure

health risk impacts from grading equipment diesel exhaust particulates would therefore be less than significant.

SIGNIFICANCE OF IMPACT

The proposed project would not have a significant effect on human health or the environment as a result of diesel emissions during construction. Therefore, no significant impact would occur.

MITIGATION, MONITORING, AND REPORTING

Because no significant diesel air toxics health risk impacts were identified, no mitigation is required.

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4.7 BIOLOGICAL RESOURCES

The following biological resources discussion is based on information provided in the *Biological Technical Report for the Otay Mesa Trunk Sewer* (January 2005) prepared by HELIX Environmental Planning, Inc. This document is included as Appendix E to the Draft EIR.

4.7.1 EXISTING CONDITIONS

SITE DESCRIPTION

Otay Mesa is a large, flat mesa with steep-sloping sides. Many of the flattest portions of the mesa support broad-based hummocks that in some cases form what is referred to as mima-mound topography. At the west end of the study corridor, headward erosion has caused Otay Mesa to be cut by a number of large canyons with associated tributary canyons. Canyons on the north side of the mesa tend to drain into the Otay River, and canyons to the south tend to drain into the Tijuana River. The heads of the two largest unnamed tributaries on Otay Mesa, within Spring and Dennery canyons, draining respectively to the south and north, are within approximately 1,100 feet (0.2 mile) of one another. The proximal point of these two canyons forms a regional wildlife corridor, connecting the north and south sides of Otay Mesa.

The soils on the top of Otay Mesa include Stockpen gravelly clay loam, Huerhuero loam, and Olivehain cobby loam. Soils types represented on slopes within the study corridor include Olivehain cobby loam, Diablo clay, and Linne clay loam (Bowman 1973).

The climate of Otay Mesa tends to be mild because the site is near the Pacific Ocean and its moderating influences. This influence is mostly evident during times of heavy coastal fog in the mornings and late afternoons/evenings that occur in late spring and early summer (June gloom). Regardless of this moderating influence, temperatures on Otay Mesa can fluctuate widely, depending on the time of year and prevailing winds.

BIOLOGICAL SURVEY METHODS

HELIX Environmental Planning, Inc. biologists conducted vegetation mapping for the study corridor on July 29 and 30 and August 13, 2003. The project area study corridor was determined to be within 300 feet of either side of the proposed alignment (Figure 4.7-1). This project study corridor width was chosen because the standard survey area for the City of San Diego is 300 feet from each side of the project. Vegetation communities within the study corridor were mapped on a 1-inch equals 200 feet scale aerial photomap. The site was surveyed on foot, with the aid of binoculars where necessary. Sensitive animal species were recorded when seen. Phase 2C was not surveyed or included as part of the biological study corridor because pipeline alignments and pump station locations have not been determined for this phase.

In addition to the vegetation mapping and recodation of sensitive animal species, HELIX has conducted focused surveys for various other projects within or adjacent to the study corridor. Information from the following reports/surveys has been included in the biological technical report for the proposed project and are hereby incorporated by reference:

- Quino checkerspot butterfly surveys for Otay Mesa Community Plan Update (OMCPU) Neighborhood 6, SR-905, Handler, and Brown Field projects

- Fairy shrimp surveys for the following projects: State Route 905, San Diego Air Commerce Center at Brown Field Airport Master Plan, OMCPU Neighborhood 6, Handler Otay Mesa Commercial Project, Otay Mesa Road Vernal Pool Preserve, Sweetwater Union High School District Vernal Pool Preserve, Robinhood Ridge Vernal Pool Preserve, the Bachman Property, and the City Vernal Pool Plant Survey.
- Rare plant surveys on the (OMCPU) Neighborhood 6, SR-905, Handler, and Brown Field projects
- Rare vernal pool plants have been monitored at the SUHSD, Otay Mesa Road, and Robinhood Ridge preserves
- Coastal California gnatcatcher surveys for SR-905 and Brown Field
- Burrowing owl surveys for Brown Field and (OMCPU) Neighborhood 6

VEGETATION COMMUNITIES

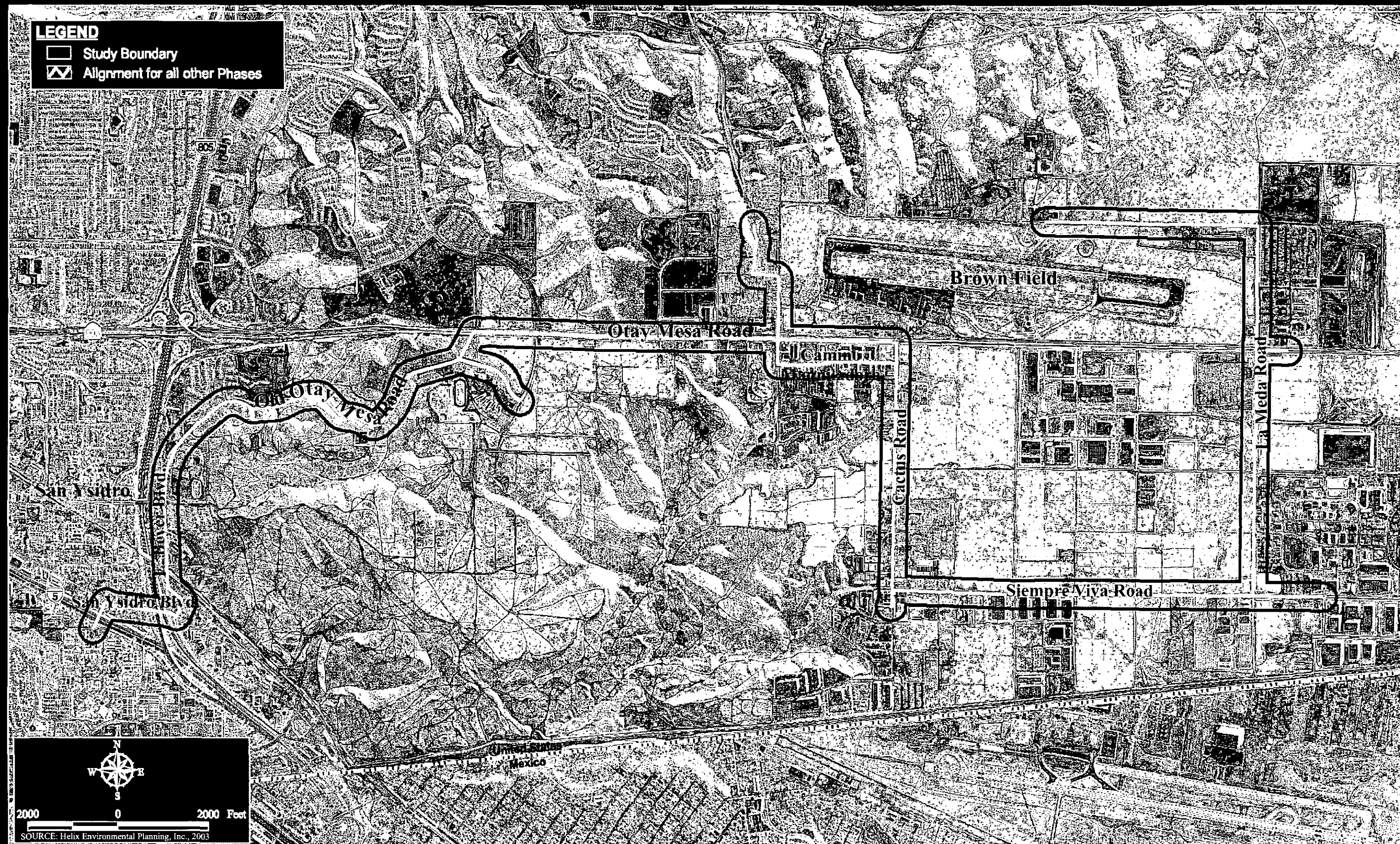
The project study corridor supports several sensitive habitat types including maritime succulent scrub, Diegan coastal sage scrub, southern willow scrub, non-native grassland, vernal pools, road pools, freshwater marshes, mule fat scrub, seasonal ponds, and disturbed wetlands. Other habitats also occur within the project area including eucalyptus woodland, agricultural land, disturbed habitat (often bare ground), and developed areas. Vegetation maps for the project study corridor are provided in Figures 4.7-2 through 4.7-6. A summary of the vegetation types in the study corridor is given in Table 4.7-1.

WETLANDS

Vernal Pools

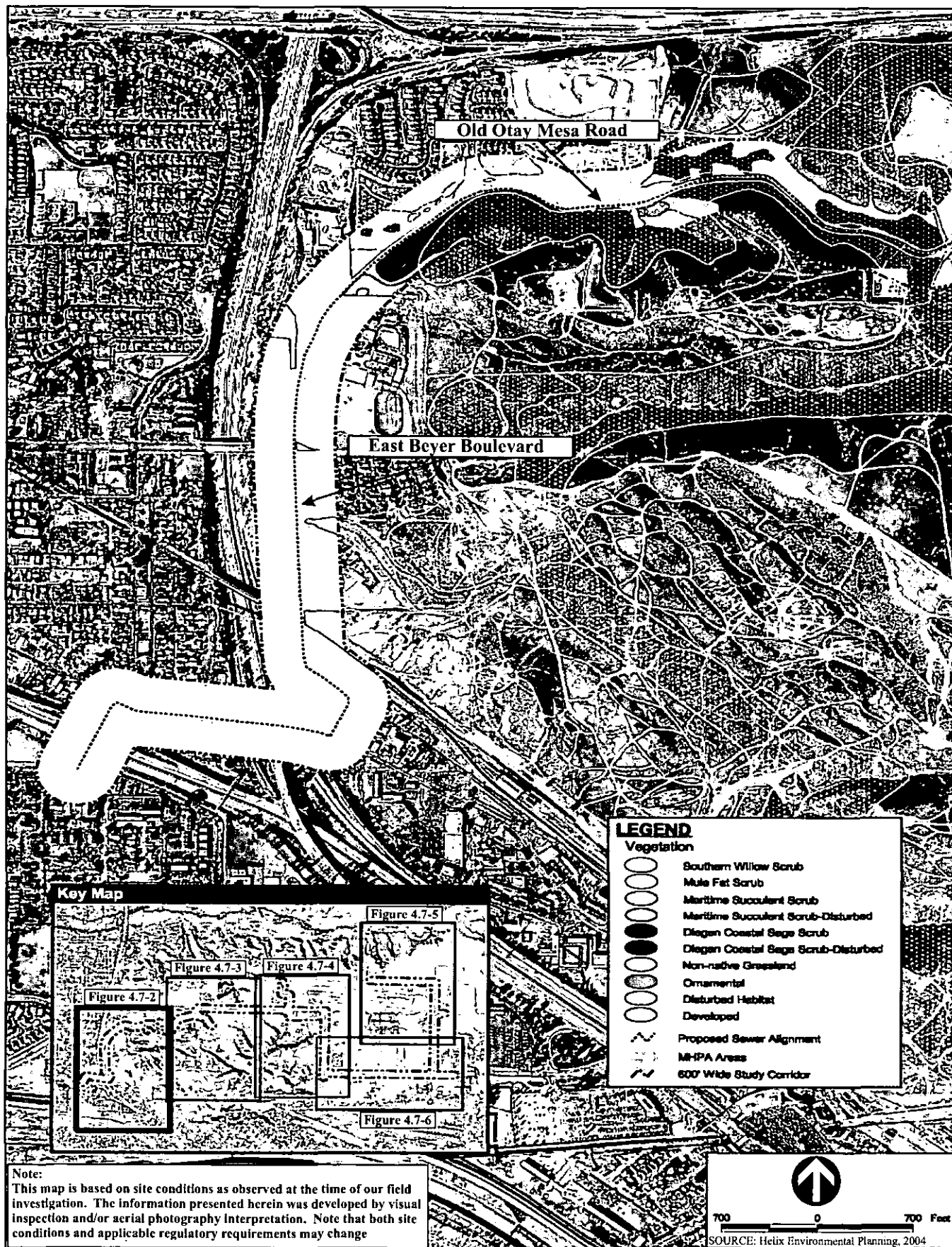
Vernal pools are a highly specialized habitat supporting a unique flora and fauna. Vernal pools are associated with two important physical conditions: a subsurface hardpan or claypan that inhibits the downward percolation of water and topography characterized by a series of low hummocks (mima mounds) and depressions (vernal pools). These two physical conditions allow water to collect in the depressions during the rainy season. Water that has collected in these vernal pools gradually evaporates with the passing of the rainy season. As water evaporates, a gradient of low soil water availability to high soil water availability is created from the periphery of the pool margins to the center of the pool. The chemical composition of the remaining pool water becomes more concentrated as the pool water evaporates, creating a gradient of low ion concentration at the pool periphery to high ion concentration at the pool center. A temporal succession of plant species will occur at the receding pool margins, depending upon the physical and chemical microenvironmental characteristics of the pool. Vernal pools in a wet year will have a high proportion of native species that are endemic to, or only found within, this habitat. During these years the exotic, ruderal species characteristic of the non-native grasslands that occur on the surrounding mima mounds will not invade these pools as they are unable to tolerate the physiological conditions. In years of scarce rainfall that is insufficient to saturate the soil and create a surface pool, the native endemic flora will not germinate and the pool will be invaded by the exotic species.

Vernal pools are considered sensitive by the CDFG, County of San Diego (County), and City because they support sensitive species, are limited in distribution, and are declining in area. Vernal pools occur in several vernal pool restoration areas near Otay Mesa Road. A vernal pool occurs near the intersection of Old Otay Mesa and Airway Roads. Vernal pools within the study corridor total approximately 0.5 acres.



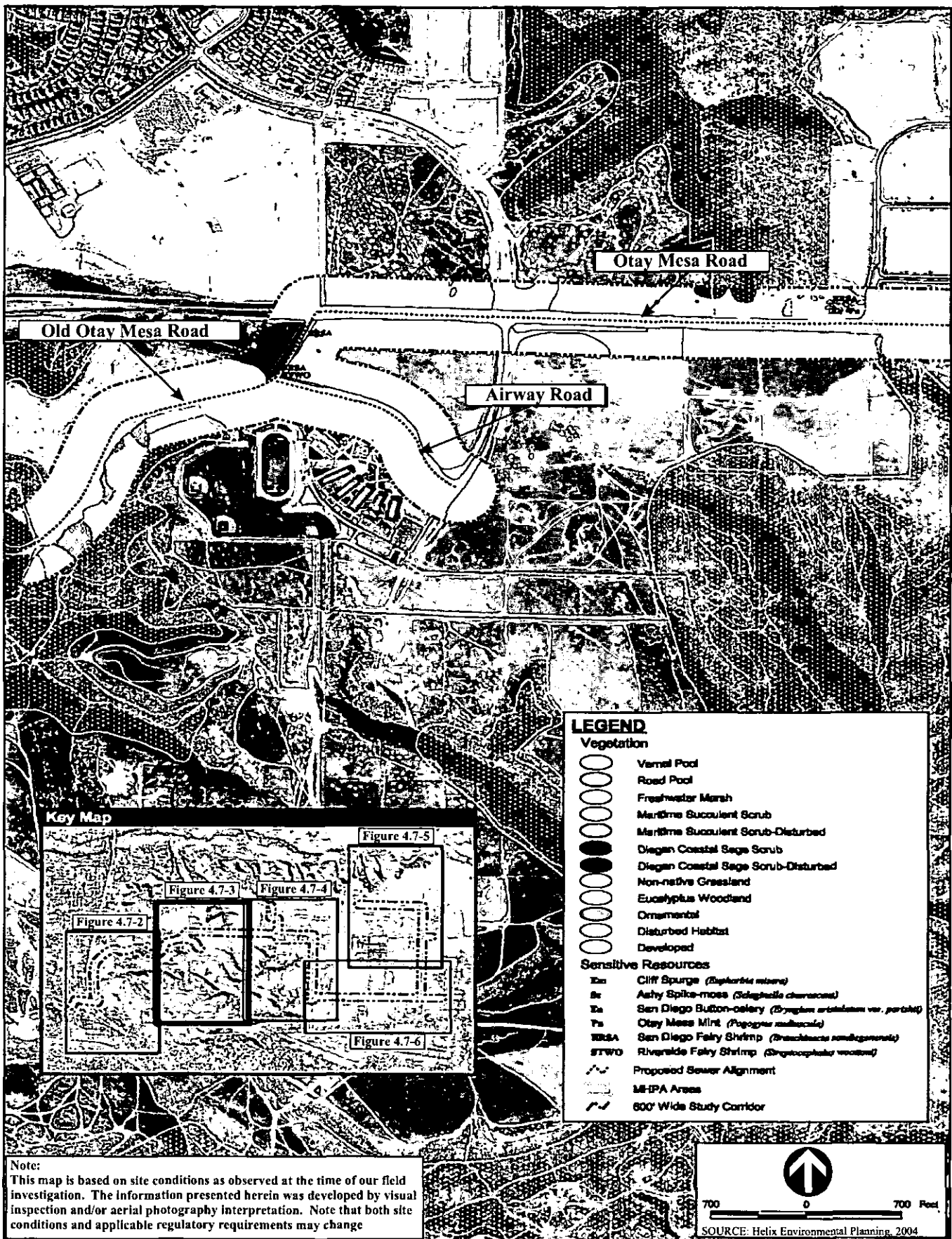
BIOLOGICAL RESOURCES STUDY CORRIDOR BOUNDARY

FIGURE 4.7-1



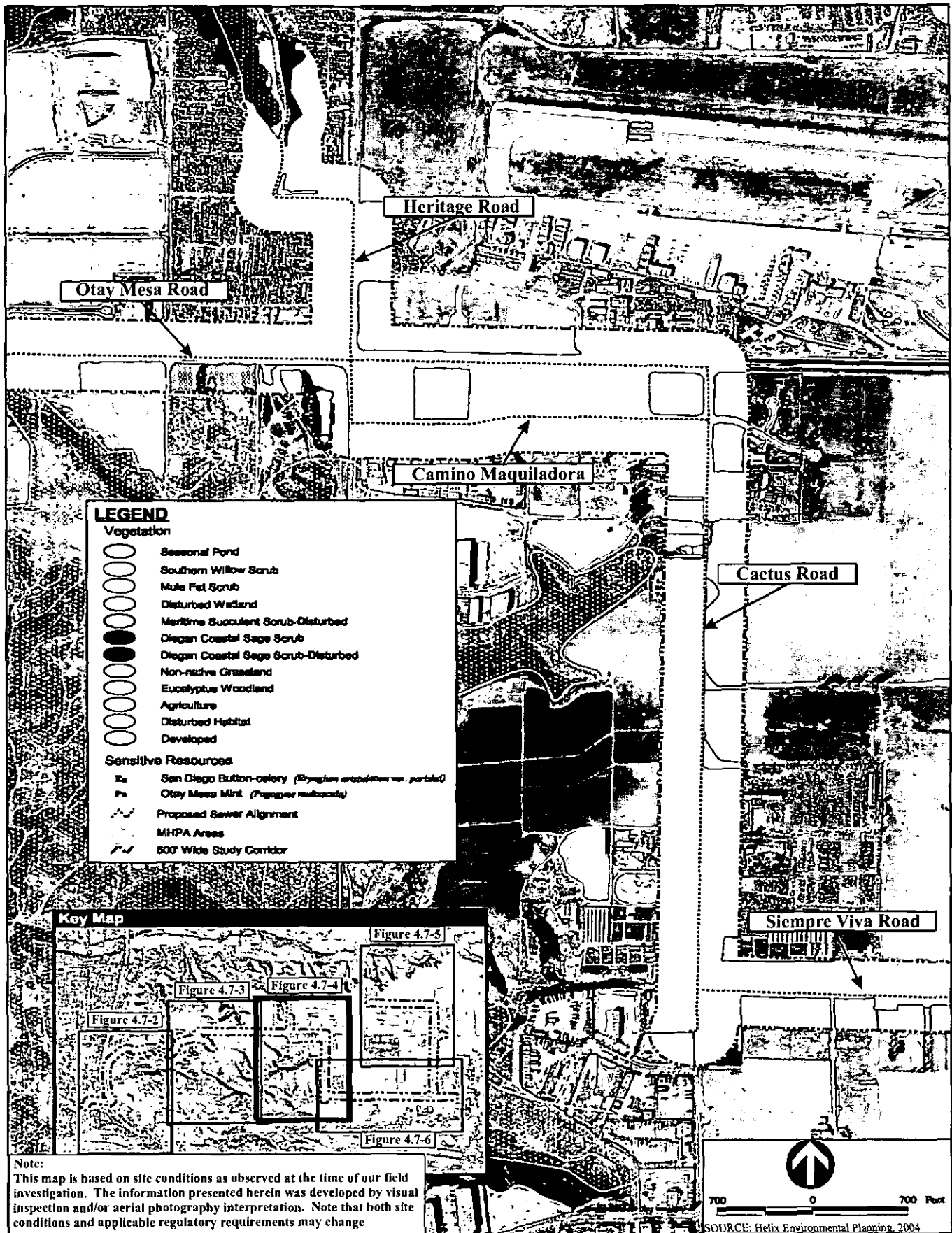
**HABITAT TYPES LOCATED
WITHIN BIOLOGICAL STUDY CORRIDOR**

FIGURE 4.7-2



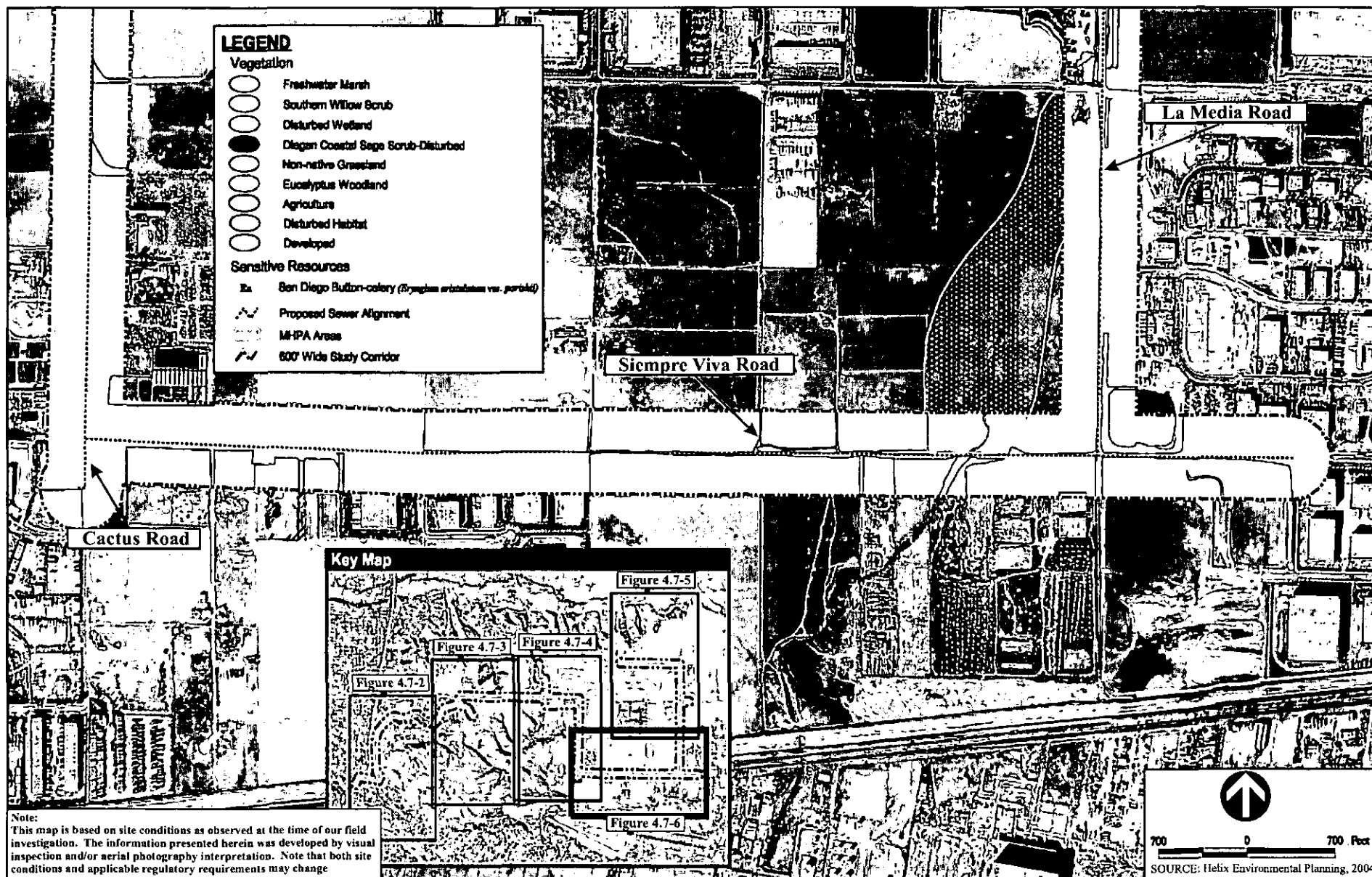
**HABITAT TYPES LOCATED
WITHIN THE BIOLOGICAL STUDY CORRIDOR**

FIGURE 4.7-3



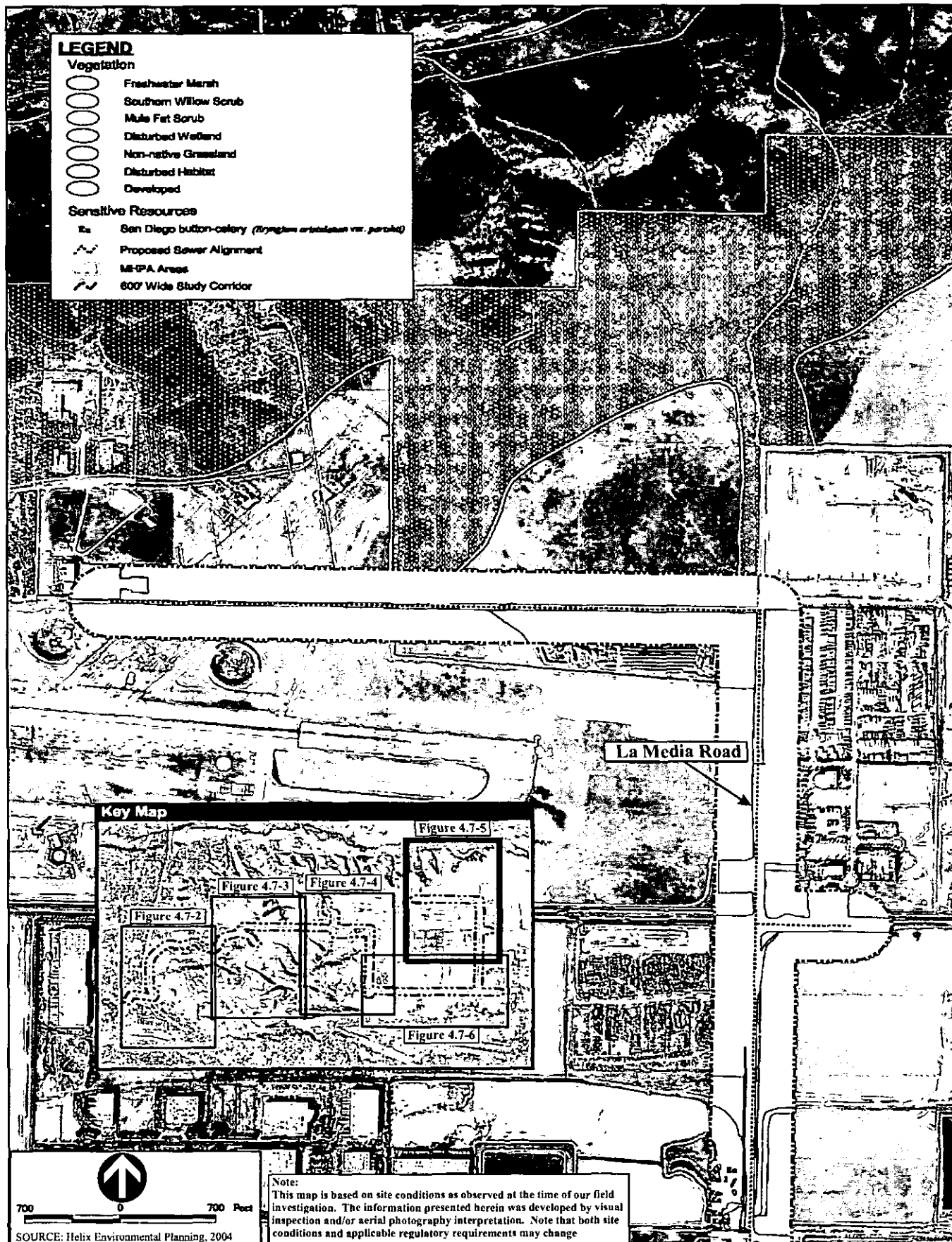
**HABITAT TYPES LOCATED
WITHIN THE BIOLOGICAL STUDY CORRIDOR**

FIGURE 4.7-4



HABITAT TYPES LOCATED WITHIN BIOLOGICAL STUDY CORRIDOR

FIGURE 4.7-5



**HABITAT TYPES LOCATED
WITHIN THE BIOLOGICAL STUDY CORRIDOR**

FIGURE 4.7-6

Table 4.7-1. Summary of Vegetation Communities

Habitat Types	Total Acres Within the Corridor	Total Acres Impacted by the OMTS Project	Project Phase In Which Impact Would Occur
Wetlands			
Vernal Pools	0.5	0	-
Road Pools	0.03	0	-
Seasonal pond	0.9	0	-
Southern willow scrub	0.7	0	-
Freshwater marsh	0.9	0	-
Mule fat scrub	0.2	0	-
Disturbed wetland	5.2	0	-
Uplands			
Diegan coastal sage scrub	23.6	0	-
Diegan coastal sage scrub – disturbed	15.2	0	-
Maritime succulent scrub	12.0	0	-
Maritime succulent scrub – disturbed	10.2	0	-
Non-native grassland	249.7	2.8	Phase 2E
Other Uplands			
Eucalyptus woodland	1.0	0	-
Agriculture	10.5	0	-
Disturbed habitat	56.9	7.1	-
Ornamental	1.1	0	-
Developed	423.0	70.7	All phases except 2B3 (Phase 2C not surveyed)
TOTAL	811.6	80.6	-

Source: HELIX, 2004

Road Pools

Road pools are water-holding basins distinguished from vernal pools by their lack of vernal pool indicator plant species (ACOE 1997). These pools occur primarily on dirt roads and trails where soils have been packed down. This compaction allows water to pond readily, even in a dry year when vernal pools on site would remain dry. Even with adequate water, the level of soil compaction in the road pools makes it very difficult for vegetation to become established. In many cases the road pools were completely devoid of vegetation. While the road pools do not meet vernal pool vegetation criteria as determined by the ACOE, they do have the potential to support the federally listed endangered San Diego (*Branchinecta sandiegonensis*) and Riverside (*Streptocephalus woottoni*) fairy shrimp. If the road pools contain either of the two species of fairy shrimp, then they are considered to be the habitat of sensitive biological resources, as defined by the ACOE. Subsequent surveys may determine these areas to be vernal pools. A road pool has been mapped by the intersection Otay Mesa Road and Old Otay Mesa Road. Road pools within the study corridor total approximately 0.03 acres.

Seasonal Ponds (Standing Pool)

Seasonal ponds (standing pool) are larger basins, usually manmade, that contain area(s) of open water for a large portion of the year. Two seasonal ponds occur just west of Heritage Road. These ponds may dry up during the summer and fall, but their margins support wetland dependent vegetation. Within the study corridor, seasonal ponds total 0.9 acres.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* sp.) often in association with mule fat (*Baccharis salicifolia*). Southern willow scrub is naturally limited, with the remaining area provides important habitat for many animals. Other important wetland functions include flood conveyance, flood storage, and water quality and sediment control. Southern willow scrub habitat on site tends to be small areas with a few willows in ephemeral drainages. Approximately 0.7 acres of southern willow scrub occurs within the study corridor.

Freshwater Marsh

Freshwater marsh is dominated by perennial emergent monocots that can reach a height of between 12 and 15 feet. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs. These areas tend to be permanently flooded by fresh water yet lack a significant current. This wetland habitat is naturally limited and remaining acreage provides important habitat for migrant birds as well as performing many other functions such as floodwater conveyance and water quality control. The dominant species in this community is cattail (*Typha* sp.). Marshes within the study corridor often remain flooded from urban runoff. Approximately 0.9 acres of freshwater marsh occurs within the study corridor.

Mule Fat Scrub

Mule fat scrub is a shrubby, riparian community dominated by mule fat, which occurs along intermittent streams with a fairly coarse substrate and moderately deep water table. Understory vegetation is often composed of non-native, weedy species or is lacking altogether. Approximately 0.2 acres of mule fat scrub occurs within the study corridor. These sites are usually small stands of mule fat, occurring in ephemeral drainages.

Disturbed Wetlands

In some areas, this community is dominated by exotic wetland species that have invaded sites that have been previously disturbed or have undergone periodic disturbances such that these invasive non-natives have displaced the native wetland flora. In other areas, the species present are non-native annual species such as Italian ryegrass (*Lolium multiflorum*) and annual beard grass (*Polypogon monspeliensis*), which occur in low areas adjacent to the creek that flood and scour frequently. Approximately 5.2 acres of disturbed wetlands occur within the study corridor. These sites tend to be small strips of wetland vegetation, surrounded by non-native grassland and development.

UPLANDS

Diegan Coastal Sage Scrub (including disturbed)

Diegan coastal sage scrub occurs in similar situations as maritime succulent scrub but has subshrubs that are slightly less adapted to drought and generally has a more vigorous understory. Diegan coastal sage scrub is a subset of the more widely distributed coastal sage scrub of California that occurs along the coastal slope of San Diego and southern Orange counties. Dominant Diegan coastal sage scrub species vary throughout its

range, depending on slope, aspect, and soil type. Diegan coastal sage scrub species within the study corridor include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), lemonadeberry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), San Diego sunflower (*Viguiera laciniata*), and bladderpod (*Isomeris arborea*). The dominant species in this area are California sagebrush, California buckwheat, and lemonadeberry. The open shrub structure of this vegetation type typically allows for a relatively abundant herbaceous layer. Disturbed coastal sage scrub communities show evidence of disturbance such as dumping, past clearing or weed invasion. Disturbed communities typically have a lower cover of shrub species and a higher cover of non-native herbaceous species. Coastal sage scrub is considered a sensitive habitat by several resource agencies, including CDFG, City, and County. The primary mechanisms for the loss of sage scrub within California have been agriculture and urbanization. Approximately 23.6 acres of Diegan coastal sage scrub and 15.2 acres of disturbed Diegan coastal sage scrub occur within the study corridor, primarily within Spring and Dennery canyons.

Maritime Succulent Scrub (including disturbed)

Maritime succulent scrub is a highly drought-adapted plant community of sub-shrubs that occurs on shallow soils on dry slopes and mesas and has a floral assemblage including many succulents. The under story is usually spare and sometimes rocky. This plant community reaches its northern distribution limit in southern California and is more commonly found in Baja California, Mexico (Baja), where it becomes a common shrub community. Species associated with maritime succulent scrub within the study corridor include cliff spurge (*Euphorbia misera*), San Diego bur-sage (*Ambrosia chenopodifolia*), prickly pear and cholla cacti (*Opuntia* sp.), jojoba (*Simmondsia chinensis*), and San Diego barrel cactus (*Ferocactus viridescens*). The dominant maritime succulent scrub species in the study corridor were San Diego bur-sage and jojoba. Maritime succulent scrub also contains Diegan coastal sage scrub species such as California sagebrush and California buckwheat. Disturbed maritime succulent scrub communities show evidence of disturbance such as dumping, past clearing, or weed invasion. Disturbed communities typically have a lower cover of shrub species and a higher cover of non-native herbaceous species. This habitat is primarily located in the Old Otay Mesa Road portion of the study corridor. Maritime succulent scrub is considered a sensitive habitat by several resource agencies, including CDFG, City, and County. Approximately 12.0 acres of maritime succulent scrub and 10.2 acres of disturbed maritime succulent scrub occur within the study corridor, primarily bordering Old Otay Mesa Road.

Non-native Grassland

Non-native grassland is characterized by a dense to sparse cover of exotic annual grasses and is often associated with numerous species of showy-flowered native annual forbs (Holland 1986). The grasslands occur on gradual slopes with deep, fine-textured (e.g., clay) soils. Characteristic species in the study corridor include oats (*Avena* spp.), foxtail chess (*Bromus madritensis* ssp. *rubens*), ripgut grass (*B. diandrus*), filaree (*Erodium* spp.), and mustard (*Brassica* spp.). Although not as sensitive as native grasslands, non-native grasslands can support many of the same plant and animal species. Non-native grassland is also valuable as foraging habitat for sensitive raptor species. Non-native grassland is concentrated in the central portion of the study corridor and likely represents areas that have not been recently disturbed or used for agriculture. The habitat's use by raptor species (for foraging) results in it being sensitive under CEQA. Approximately 249.7 acres of non-native grassland occur within the study corridor.

Eucalyptus Woodland

Eucalyptus woodlands are a type of non-native vegetation, dominated by eucalyptus trees (*Eucalyptus* sp.). These introduced trees are drought tolerant once established and produce a large amount of leaf and bark litter. Although eucalyptus trees are present elsewhere in the study corridor, they are typically associated with developed areas and some were included within units mapped as developed. This habitat is generally not considered sensitive, but eucalyptus trees are one of many trees that can support sensitive nesting raptor

species. These woodlands tend to be strips of eucalyptus near developed areas. Approximately 1.0 acres of eucalyptus woodland occur within the study corridor.

Agriculture

Agriculture includes lands that have remained cleared for the express purpose of farming. Many areas of Otay Mesa were historically used for farming or ranching, but have reverted into systems such as non-native grasslands (HELIX Environmental Planning, 2005). Approximately 10.5 acres of agricultural land occur within the study corridor, primarily along Cactus Road and Siempre Viva.

Disturbed Habitat

Areas that are highly disturbed primarily include bare soil areas such as those along dirt roads or areas dominated by exotic broad-leaf species that are adapted to a regime of frequent disturbance. Many of the characteristic species of this habitat also occur in non-native grasslands, such as mustard, tocalote (*Centaurea melitensis*), fennel (*Foeniculum vulgare*), and Russian thistle (*Salsola tragus*). Approximately 56.9 acres of disturbed habitat occurs within the study corridor.

Ornamental

Ornamental planting is another type of upland habitat containing non-native plants installed for the sake of decoration. These habitats may include a variety of ornamental flowers, ground coverings, bushes, and trees. Ornamental plantings often rely on irrigation to remain viable. A total of approximately 1.1 acres of ornamental habitat occur within the study corridor.

Developed Areas

Developed areas include all manmade structures, including paved roads, commercial and industrial buildings, residences, landscaped areas, storage yards, Brown Field Airport, and riprap. These areas are not sensitive from a biological resources standpoint. Developed areas dominate the eastern end of the study corridor near Cactus Road, and the area west of I-5 and I-805 and total approximately 423.0 acres.

AREAS SUBJECT TO ACOE AND CDFG JURISDICTION

Jurisdictional Waters of the U.S. (i.e., non-wetland Waters of the U.S. and wetlands) are regulated by the ACOE, and streambeds and associated vegetation are regulated by the CDFG. These jurisdictional areas are defined by their presence of water, wetland vegetation, and/or specific soil conditions. Because of the programmatic nature of this EIR, and because the majority of the proposed project would be constructed in existing roadway rights-of-way (ROWs), no formal jurisdictional delineations were conducted in the proposed project area. However, wetland types and possible Waters of the U.S. were recorded during vegetation mapping. Waters of the U.S. were observed to cross under ROWs in a few places in the Otay Mesa area and were identified to exist within the project area near Old Otay Mesa Road. In certain places, the waters pass under existing ROWs via culverts, which are not considered jurisdictional, since they lack the hydric soils and wetland vegetation necessary to be ACOE jurisdictional.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive plant and animal species that have been observed in the project study corridor are identified and discussed in the following section. Plants and animal species are designated as sensitive as a result of listing by the USFWS, CDFG, or California Native Plant Society. These species are also listed in the Biological Resources Technical Report (HELIX Environmental 2004) provided as Appendix E.

SENSITIVITY DESIGNATIONS

Federal listing of endangered and threatened wildlife and plants is administered by the USFWS. Before a plant or animal species can receive protection under the federal Endangered Species Act (ESA), it must first be placed on the Federal list. The program follows a strict legal process to determine whether to list a species, depending on the degree of threat it faces. An "endangered" species is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened" species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of plant and animals native to the United States that are candidates or proposed for possible addition to the Federal list.

CDFG's implementation of the California ESA has created a program that is similar in structure to, but different in detail from, the USFWS program implementing the federal ESA. The CDFG maintains a list of designated endangered, threatened, and rare plant and animal species. Listed species are either designated under the Native Plant Protection Act, or designated by the Fish and Game Commission. In addition to recognizing three levels of endangerment, the CDFG can afford interim protection to candidate species while they are reviewed by the Fish and Game Commission.

The CDFG also maintains a list of animal "Species of Special Concern," most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, the CDFG recommends consideration of them during analysis of the impacts of proposed projects to protect declining populations and avoid the need to list them as endangered in the future.

Under provisions of Section 15380(d) of CEQA, the lead agency and CDFG, in making a determination of significance, must treat non-listed plant and animal species as equivalent to listed species if such species satisfy the minimum biological criteria for listing. In general, the CDFG considers species on Lists 1A, 1B, or 2 of the *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994) as qualifying for consideration under this CEQA provision. Species on the Native Plant Society's List 3 or 4 may, but generally do not, qualify for protection under this provision.

SENSITIVE VEGETATION COMMUNITIES

Sensitive habitats are considered rare within the region, are considered sensitive by CDFG, are listed as sensitive under the Multiple Species Conservation Program (MSCP) (City 1997) and/or the City's Land Development Code Biology Guidelines (City 2002), or support sensitive plants or animals. The sensitive habitats that occur in the study corridor are listed below.

The MSCP divides upland vegetation habitats into four tiers of sensitivity based on rarity, with Tier I being the most sensitive. Maritime succulent scrub is the only Tier I habitat within the study corridor. Tier II habitats on Otay Mesa include Diegan coastal sage scrub. Tier IIIB includes non-native grasslands. The least sensitive Tier IV communities include disturbed habitat, agricultural lands, and eucalyptus woodland.

Wetland communities occurring in the study corridor that are considered sensitive under the MSCP include vernal pools, road pools, southern willow scrub, mule fat scrub, disturbed wetlands and seasonal ponds. All of these communities are regulated by the City, and some are regulated by the ACOE and CDFG. Mitigation is required for impacts to these communities.

SENSITIVE PLANT SPECIES

Fourteen sensitive plant species were determined to occur in the project study corridor, based on focused sensitive plant surveys conducted at various locations throughout the study corridor during the course of other projects on Otay Mesa. Based upon prior surveys in nearby projects, which partially overlap with the proposed project, a number of additional sensitive plant species have the potential to occur in the project area.

A summary of the sensitive plant species and the results of the previous fieldwork and surveys are provided in Table 4.7-2. Since no focused sensitive plant surveys were conducted for the proposed project, the potential exists for additional sensitive plants to occur in areas of the study corridor not encompassed by other projects.

SENSITIVE WILDLIFE SPECIES

Nineteen sensitive animal species have been observed in the project study corridor during focused surveys for other projects or vegetation mapping for this project. All of the animal species identified during the surveys were identified by direct observation or by the presence of scat or tracks. Based upon prior surveys in nearby projects, which partially overlap with the proposed project, a number of additional sensitive animal species have the potential to occur in the project area. A summary of these species and the results of the fieldwork and surveys are in Table 4.7-3.

The Riverside and San Diego Fairy Shrimp, considered endangered by the USFWS, and the Coastal California Gnatcatcher, considered threatened by the USFWS, were observed within the project study corridor. The Golden Eagle was also observed, which is federally protected under the Federal Bald Eagle Act.

No state-listed endangered and threatened species were observed within the project corridor; however, the following California species of special concern were observed: Yellow-breasted chat, San Diego black-tailed jackrabbit, Orange-throated whiptail, Northern harrier, Coastal cactus wren, Cooper's hawk, Southern California rufous-crowned sparrow, Loggerhead shrike, and the California horned lark. Also observed were the Black-crowned night heron and the Great egret, which are both considered to be breeding area special animals by the CDFG. No other federal or state listed species were observed.

4.7.2 REGULATORY STANDARDS

Biological resources within the project study area are subject to regulatory administration by the federal government and the State of California. The federal government administers non-marine plant and wildlife-related issues through the USFWS, while Waters of the U.S. issues are administered through the ACOE and the California Regional Water Quality Control Boards. California law relating to wildlife issues is administered by the CDFG while CDFG and the California Regional Water Quality Control Boards both administer laws relating to Waters of the State.

FEDERAL

ENDANGERED SPECIES ACT

The federal ESA, administered by the USFWS, provides the legal framework for the listing and protection of species (and their habitats), which are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a 'take' under the ESA. Section 9(a) of the ESA defines take as, "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 'Harm' and 'harass' are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

Sections 10(a) and 7 of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 10(a) allows issuance of permits for 'incidental' take of endangered or threatened species. The term 'incidental' applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. A habitat conservation plan, demonstrating how the taking will be minimized and what steps taken would ensure the species' survival, must be submitted for issuance of Section 10(a) permits.

Table 4.7-2. Listed, Sensitive, or Narrow Endemic Plant Species with Potential to Occur

Species	Species Sensitivity				Potential to Occur	Observed?
	Federal Status	State Status	CNPS List	R-E-D Codes		
San Diego thornmint (<i>Acanthomintha ilicifolia</i>)	FT	SE	1B	2-3-2	Moderate. Appropriate habitat is present. Has been found south of Otay Lakes.	No
San Diego County needlegrass (<i>Achnathurum diegoense</i>)	-	-	4	1-2-1	High. Known to occur in project vicinity and appropriate habitat is present.	No
California adolphia (<i>Adolphia californica</i>)	-	-	2	1-2-1	High. Found in maritime succulent scrub south of Old Otay Mesa Road. May be present in other scrub areas.	Yes
Shaw's agave (<i>Agave shawii</i>)	-	-	2	3-3-1	High. Appropriate habitat is present. Known to occur in project vicinity.	No
San Diego bur-sage (<i>Ambrosia chenopodifolia</i>)	-	-	2	3-3-1	High. Co-dominant within the maritime succulent scrub habitat on the site.	Yes
San Diego ambrosia (<i>Ambrosia pumila</i>)	FE	-	1B	3-3-2	Moderate. Appropriate habitat is present.	No
Aphanisma (<i>Aphanisma blitoides</i>)	-	-	1B	2-2-2	Very low. Species' range is coastal and west of project area.	No
Coastal dunes milk vetch (<i>Astragalus tener</i> var. <i>titi</i>)	FE	SE	1B	3-3-3	None. Occurs on coastal dunes. Plant range outside of study area.	No
Encinitas baccharis (<i>Baccharis vanessae</i>)	FT	SE	1B	2-3-3	Very low. Appropriate habitat is missing.	No
Golden-spined cereus (<i>Bergerocactus emoryi</i>)	-	-	2	2-2-1	High. Occurs on Otay Mesa east of Dennery Canyon. Habitat present.	No
Orcutt's brodiaea (<i>Brodiaea orcuttii</i>)	-	-	1B	1-3-2	High. Rang includes pools in Otay Mesa.	No
Orcutt's bird-beak (<i>Cordylanthus orcuttianus</i>)	FSC	-	2	3-3-1	High. Known to occur in project vicinity and appropriate habitat is present.	No
Otay tarplant (<i>Deinandra conjugens</i>)	FT	SE	1B	3-3-2	High. Mapped near vernal pools in the Otay Mesa Road project, at the SUHSD and New Millennium sites near the study corridor. Grows well in disturbed areas. May be present in other areas within the study corridor.	Yes
Western dichondra (<i>Dichondra occidentalis</i>)	-	-	4	1-2-1	High. Known to occur in project vicinity and appropriate habitat is present.	No
Short-leaved dudleya (<i>Dudleya blochmaniae</i> ssp. <i>brevifolia</i>)	-	SE	1B	3-3-3	Low. Appropriate habitat missing.	No
Variegated dudleya (<i>Dudleya variegata</i>)	-	-	1B	2-2-2	High. Occurs in a restoration area in the Otay Mesa Road site and north of Brown Field in the New Millennium site. Mapped along La Media Road in 2002 for the SR-905 project. May occur in other locations within the study corridor.	Yes

Table 4.7-2 Continued

Species	Species Sensitivity				Potential to Occur	Observed?
	Federal Status	State Status	CNPS List	R-E-D Codes		
San Diego button-celery (<i>Eryngium aristulatum</i> var. <i>parishii</i>)	FE	SE	1B	2-3-2	High. Occurs in vernal pools across Otay Mesa. Occurs within pools in the study corridor in Bauder J13N and J13S, the Otay Mesa Road preserve, and a site along La Media Road in 2003. May be present in other pools within the study corridor.	Yes
Cliff spurge (<i>Euphorbia misera</i>)	-	-	2	2-2-1	High. Common component of maritime succulent scrub habitat near Spring Canyon. Observed during the vegetation mapping in 2003.	Yes
San Diego barrel cactus (<i>Ferocactus viridescens</i>)	-	-	2	1-3-1	High. Occurs scattered in low numbers throughout the maritime succulent scrub slopes near Spring Canyon.	Yes
Palmer's grapplinghook (<i>Harpagonella palmeri</i>)	-	-	2	1-2-1	Moderate. Appropriate habitat is present. Within historical range.	No
Decumbent goldenbush (<i>Isocoma menziesii</i> var. <i>decumbens</i>)	-	-	1B	2-2-2	High. Mapped within the Bachmann site near Otay Mesa High School in 1999. May be present in other locations within the study corridor.	Yes
Southwestern spiny rush (<i>Juncus acutus</i> ssp. <i>lepidii</i>)	-	-	4	1-2-1	High. Known to occur in project vicinity and appropriate habitat is present.	No
San Diego goldenstar (<i>Muilla clevelandii</i>)	-	-	1B	2-2-2	Moderate. Found near the study corridor but appropriate habitat is poor within.	No
Little mousetail (<i>Myosurus minimus</i> ssp. <i>apus</i>)	FSC	-	3	2-3-2	High. Round in pools within the Otay Mesa Road preserve and Bauder J14 series pools in 2003 and also in the SUHSD vernal pool restoration site and the New Millennium site near the study corridor.	Yes
Spreading navaretia (<i>Navarretia fossalis</i>)	FT	-	1B	2-3-2	High. Found in pools in Bauder J13S series. Seen in pools in the Handler, SUHSD site and Robinhood Ridge project near the study corridor. May be present in other pools within the study corridor.	Yes
California orcutt grass (<i>Orcuttii californica</i>)	FE	SE	1B	3-3-2	High. Present in vernal pools and road pools in the Bauder J series on Goat Mesa south of Otay Mesa High School.	Yes
California's adder's-tongue fern (<i>Ophioglossum californicum</i>)	-	-	4	1-2-2	Moderate. Has been found in the region.	No
Snake cholla (<i>Opuntia parryi</i> var. <i>serpentina</i>)	-	-	1B	3-3-2	High. Found in maritime succulent scrub within the study corridor	Yes
San Diego mesa mint (<i>Pogogyne abramsii</i>)	FE	SE	1B	2-3-3	Low. Species' range is north of the project area.	No
Otay Mesa mint (<i>Pogogyne nudiuscula</i>)	FE	SE	1B	3-3-2	High. Recorded in 2003 in pools at the Otay Mesa Road restoration site. Seen at the SUHSD vernal pool restoration site near the study corridor. May be present in other pools within the study corridor.	Yes

Table 4.7-2 Continued

Species	Species Sensitivity				Potential to Occur	Observed?
	Federal Status	State Status	CNPS List	R-E-D Codes		
Small-leaved rose (<i>Rosa minutifolia</i>)	-	SE	2	3-3-1	High. Only known U.S. population now occurs in a reserve partially within the study corridor.	No
Munz's sage (<i>Salvia munzii</i>)	-	CEQA	2	2-2-1	Low. Appropriate habitat is present. Not found in area during other studies.	No
Parry's tetracoccus (<i>Tetracoccus dioicus</i>)	-	-	1B	3-3-2	Low species' range is north of project area.	No
San Diego sunflower (<i>Viguiera lacinata</i>)	-	-	4	1-2-1	High. Quite common throughout the Diegan coastal sage scrub habitat and some of the maritime succulent scrub habitat in the study corridor during the 2003 delineation survey. Occurs as a co-dominant in some areas making individual population difficult to count and map	Yes

Source: HELIX Environmental Planning, Inc., August 26, 2003.

Federal Candidates and Listed Plants

FE	Federally listed, endangered
FT	Federally listed, threatened
FPE	Federally proposed endangered
FPT	Federally proposed threatened
FSC	Federally special concern species

State Listed Plants

SE	State listed, endangered
ST	State listed, threatened
CSC	California special concern species

California Native Plant Society Lists

- 1A Species presumed extinct
- 1B Species, rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
- 2 Species rare, threatened, or endangered in California but which are more common elsewhere. These species are eligible for state listing.
- 3 Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
- 4 A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.

California Native Plant Society R-E-D Code**R (Rarity)**

- 1 Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
- 2 Occurrence confined to several populations or to one extended population.
- 3 Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.

E (Endangerment)

- 1 Not endangered
- 2 Endangered in a portion of its range
- 3 Endangered throughout its range

D (Distribution)

- 1 More or less widespread outside California
- 2 Rare outside California
- 3 Endemic to California

Table 4.7-3. Listed Sensitive Wildlife Species with Potential to Occur

Species	Federal Status	State Status	Other Status	Potential to Occur	Observed?
INVERTEBRATES					
Crustaceans					
San Diego fairy shrimp (<i>Branchinecta sandiegonensis</i>)	FE	-	-	High. Present in vernal pool and road pools throughout the study corridor.	Yes
Riverside fairy shrimp (<i>Streptocephalus woottoni</i>)	FE	-	-	High. Present in vernal pool and road pools throughout the study corridor.	Yes
Insects					
Quino checkerspot butterfly (<i>Euphydryas editha quino</i>)	FE	-	-	Moderate. Appropriate coastal sage scrub habitat present. Noted at other locations in Otay Mesa. Not found within study corridor in other surveys in past years.	No
Hermes copper (<i>Lycaena hermes</i>)	-	-	-	Moderate. Host plant <i>Rhamnus crocea</i> found on site.	No
Thorne's hairstreak butterfly (<i>Mitoura thornei</i>)	-	-	MSCP Rare	Low. Host plant Tecate cypress (<i>Cupressus forbesii</i>) not present on site.	No
VERTEBRATES					
Reptiles					
Orange-throated whiptail (<i>Cnemidophorus hyperythrus beldingi</i>)	-	CSC	-	High. Prior to 1999, several individuals were observed during the surveys. In 2002, two new locations were observed within the study corridor north of Route 905 in the far western portion of the study corridor and in the eastern tributary of Spring Canyon.	Yes
Coastal whiptail (<i>Cnemidophorus tigris multiscutatus</i>)	-	CSC	-	High. In shrub habitats.	No
Northern red diamond rattlesnake (<i>Crotalus exsul</i>)	-	CSC	-	Moderate. In coastal sage scrub and rocky areas.	No
San Diego ringneck snake (<i>Diadophis puntatus similes</i>)	-	CSC	-	Moderate. In grasslands or coastal sage scrub.	No
Coronado skink (<i>Eumeces skiltonianus interparietalis</i>)	-	CSC	-	High. Found in nearby studies. Prefers grasslands and coastal sage scrub where there is abundant low herbaceous growth.	No
Coastal Rosy Boa (<i>Lichanura trivirgata roseofusca</i>)	FSC	-	-	Moderate. Near rocky areas in coastal sage scrub.	No
San Diego horned lizard (<i>Phrynosoma coronatum blainvillei</i>)	-	CSC	-	High. In coastal sage scrub. Main food source is the harvester ant, which was observed.	No

Table 4.7-3 Continued

Species	Federal Status	State Status	Other Status	Potential to Occur	Observed?
Two-striped garter snake (<i>Thamnophis hammondi</i>)	FSC	CSC	-	Moderate. Near vernal pool habitats.	No
Western spadefoot (<i>Spea hammondi</i>)	-	CSC	-	High. Observed in pools in the Robinhood Ridge site.	No
Birds					
Cooper's hawk (<i>Accipiter cooperii</i>)	-	CSC	-	High. Observed flying over the site.	Yes
Tri-colored blackbird (<i>Agelaius tricolor</i>)	FSC	CSC	-	Moderate. A winter visitor and as a migrant mostly in grasslands and wetlands.	No
Southern California rufous-crowned sparrow (<i>Aimophila ruficeps canescens</i>)	-	CSC	-	High. Observed in coastal sage scrub	Yes
Grasshopper sparrow (<i>Ammodramus savannarum</i>)	-	-	-	High. Observed throughout grassland areas of adjacent studies.	Yes
Bell's sage sparrow (<i>Amphispiza belli belli</i>)	-	CSC	-	Moderate. In sage and chaparral communities.	No
Golden eagle (<i>Aquila chrysaetos</i>)	-	-	Protected under special Bald Eagle Act	High. Adult individuals observed hunting just west of Heritage Road on two occasions during winter surveys of 1994. Observed during 1998 and 1998 surveys for other projects.	Yes
Burrowing owl (<i>Athene cunicularia</i>)	-	-	-	High. Observed on top of the mesa just west of Spring Canyon next to Heritage Road during July and August 1994. Five active burrows were counted and up to seven young owls were observed in addition to varying numbers of adult and/or sub-adults. A pair of adults was observed within the study corridor on Goat Mesa during vegetation mapping in 2003.	Yes
Ferruginous hawk (<i>Buteo regalis</i>)	-	CSC	-	High. In grasslands and agricultural fields.	No
Coastal cactus wren (<i>Campylorhynchus brunneicapillus couesi</i>)	-	CSC	-	High. Observed foraging over the site.	Yes
Turkey vulture (<i>Cathartes aura</i>)	-	-	-	High. Foraging for carrion potential.	No

Table 4.7-3 Continued

Species	Federal Status	State Status	Other Status	Potential to Occur	Observed?
Great egret (<i>Casmerodius albus</i>)	-	Breeding area CDFG Special Animal (no actual formal status)	-	High. Individual observed on two occasions in the pond just west of Heritage Road prior to 1999.	Yes
Mountain plover (<i>Charadrius montanus</i>)	FPT	CSC	-	Low. A rare visitor to San Diego County during winter. Found in short statured grasslands and fields.	No
Northern harrier (<i>Circus cyaneus</i>)	-	CSC	Nesting	High. Observed foraging over the site	Yes
White-tailed kite (<i>Elanus leucurus</i>)	-	Breeding area CDFG Special Animal (no actual formal status)	-	High. Observed flying over grassland foraging.	Yes
California horned lark (<i>Eremophila alpestris actia</i>)	-	CSC	-	High. Observed throughout grassland areas of adjacent studies	Yes
Merlin (<i>Falco columbarius</i>)	-	CSC	-	Moderate. In winter on site at the open grasslands.	No
Prairie falcon (<i>Falco mexicanus</i>)	-	-	-	High. Observed flying over adjacent sites.	Yes
Peregrine falcon (<i>Falco peregrinus</i>)	FE	SE	-	Moderate. Rare visitor to coastal areas of San Diego.	No
Yellow-breasted chat (<i>Icteria virens</i>)	-	CSC	-	High. Prior to 1999 a single individual was heard in the main tributary to Spring Canyon. No new locations were observed within the SR-905 study corridor in 2002.	Yes
Loggerhead shrike (<i>Lanius ludovicianus</i>)	-	CSC	-	High. Observed throughout grassland areas of adjacent studies.	Yes
Black-crowned night heron (<i>Nycticorax nycticorax</i>)	-	Breeding area CDFG Special Animal	-	High. Individuals were seen in a pond just west of Heritage Road during fall 2002 surveys on the SR-905 project and these sightings represent migrants.	Yes
Coastal California gnatcatcher (<i>Poliophtila californica californica</i>)	FT	-	MSCP covered	High. Several individuals were seen the study corridor during the vegetation mapping in July 2003. Pairs of individuals were recorded in the tributary canyons of Spring Canyon during focused surveys in 2002 for the SR-905 project.	Yes

Table 4.7-3 Continued

Species	Federal Status	State Status	Other Status	Potential to Occur	Observed?
Mammals					
Dulzura California pocket mouse (<i>Chaetodipus californicus fernalis</i>)	-	CSC	-	Moderate. In scrubby areas. Trapping necessary for detection.	No
Northwestern San Diego pocket mouse (<i>Chaetodipus fallax fallax</i>)	-	CSC	-	Moderate. In coastal sage scrub and ruderal areas. Trapping necessary for detection.	No
Greater western mastiff bat (<i>Eumops perotis californicus</i>)	FSC	CSC	-	Moderate. Foraging potential in coastal sage scrub and grassland areas. Focused surveys required for detection.	No
San Diego black-tailed jackrabbit (<i>Lepus californicus bennettii</i>)	-	CSC	-	High. Present throughout the survey corridor.	Yes
San Diego desert woodrat (<i>Neotoma lepida intermedia</i>)	-	CSC	-	Moderate. Habitat is coastal sage scrub and other xeric habitats. Trapping necessary for detection.	No
Southern grasshopper mouse (<i>Onychomys torridus ramona</i>)	-	CSC	-	Moderate. Could occur in all arid habitats including all shrub lands. Trapping necessary for detection.	No
Pacific pocket mouse (<i>Perognathus longimembris pacificus</i>)	-	CSC	-	Low. Occasionally found in coastal sage scrub. Trapping necessary for detection.	No

Source: HELIX Environmental Planning, Inc., August 26, 2004.

Federal Candidates and Listed Species

FE Federally listed, endangered
 FT Federally listed, threatened
 FPE Federally proposed endangered
 FPT Federally proposed threatened
 FSC Federally special concern species

State Listed Species

SE State listed, endangered
 ST State listed, threatened
 CSC California special concern species

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Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion, issued by the USFWS for non-marine listed species issues. A special rule under Section 4(d) of the ESA was finalized which authorizes take of certain protected species under an approved NCCP Program, which is administered by the states.

CLEAN WATER ACT

Under Section 404 of the Clean Water Act, ACOE regulates the disposal of dredged and fill materials into "waters of the United States". Waters of the U.S. include intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, and wetlands adjacent to any water of the U.S. (CFR 33 Part 328). In areas subject to tidal influence, Section 404 jurisdiction extends to the high tide line. Certain waters of the U.S. are considered "special aquatic sites" because they are generally recognized as having particular ecological value. Such sites include sanctuaries and refuges, mudflats, wetlands, vegetated shallows, coral reefs, and riffle and pool complexes. Special aquatic sites are defined by the U.S. EPA and may be afforded additional consideration in the permit process for a project. The ACOE also regulates navigable waters under Section 10 of the Rivers and Harbors Act. These are defined as "...those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce" (33 CFR Part 322.2).

A permit from the ACOE must be obtained for any dredge or fill activities within jurisdictional waters of the U.S. During the permit review process the ACOE determines the type of permit appropriate for the proposed project. There are two types of permits issued by the ACOE:

- *General Permits* issued on a state, regional and nationwide basis, which cover a variety of activities including minimal individual and cumulative adverse affects. These permits fit into specific categories established by the ACOE.
- *Individual Permits* issued for a case-specific activity.

In addition to the Section 404 permit, Section 401 of the Clean Water Act requires that a 404 permit applicant obtain a certificate from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to grant certification or waive the requirement for permits under Section 401 is delegated by the State Water Resources Control Board to the Regional Water Quality Control Boards. Pursuant to the Porter-Cologne Act, each of California's nine regional boards must prepare and periodically update basin plans that set forth water quality standards for surface and groundwater, as well as actions to control point and non-point sources of pollution. Basin plans offer an opportunity to achieve wetlands protection through enforcement of water quality standards.

MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1918 (16 United States Code 703-711) is an international treaty for the conservation and management of bird species that may migrate through more than one country. It is enforced in the United States by the USFWS, and makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered a "take" and is potentially punishable by fines and/or imprisonment. In 1972, the MBTA was amended to include protection for migratory birds of prey (raptors). All species and subspecies of the families listed above are protected under the provisions of the 1972 amendment.

STATE

CALIFORNIA ENDANGERED SPECIES ACT AND NATIVE PLANT PROTECTION ACT

The California Endangered Species Act (CESA) and the Native Plant Protection Act authorizes the California Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). CESA defines “endangered” species as those whose continued existence in California is jeopardized. State listed “threatened” species are those not presently threatened with extinction, however may become endangered if their environments change or deteriorate. Protection of special-status species is detailed in Sections 2050 and 2098 of the Fish and Game Code. The California Code of Regulations (Title 14, Section 670.5) lists animal species considered endangered and threatened by the state. Formal consultation must be initiated with the CDFG for projects that may have an adverse effect on a state-listed species. If no state listed species will be affected by a proposed project, environmental documentation is provided to the CDFG at the discretion of the lead agency.

Section 2080 of the California Fish and Game Code prohibits the taking of state listed plant and animals. The CDFG also designates “fully protected” or “protected” species as those that may not be taken or possessed without a permit from the Fish and Game Commission and/or the CDFG. Species designated as fully protected or protected may or may not be listed as endangered or threatened.

FISH AND GAME CODE SECTION 1601-1603

Sections 1601-1603 of the Fish and Game Code require agencies to notify CDFG prior to any project that would divert, obstruct, or change the natural flow or bed, channel, or bank of any river, stream, or lake. The California Fish and Game Code regulates riparian and wetland habitats by requiring review and approval of impacts through issuance of a Streambed Alteration Agreement. Streambed Alteration Agreements are required prior to impacts to any riparian/wetland habitat.

NATIVE PLANT PROTECTION ACT

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. NPPA regulates collection, transport and commerce in plants that are listed. The California ESA followed NPPA and is similar to NPPA in that it provides a process by which sensitive species are listed. However, it is a process by which plants and animals can be recognized as being endangered or threatened with extinction. Plants listed as rare under the NPPA were designated threatened under the California ESA.

LOCAL

CITY OF SAN DIEGO MUNICIPAL CODE

Chapters 11 through 14 of the San Diego Municipal Code are referred to as the Land Development Code. These chapters contain the City’s planning, zoning, subdivision, and building regulations. The Environmentally Sensitive Lands (ESL) Regulations and the Biology Guidelines are supplemental development regulations related to biological resources. These regulations would be applicable to the proposed project.

City of San Diego Environmentally Sensitive Lands Regulations

ESL Regulations are provided as supplemental development regulations with the purpose of protecting, preserving, and restoring environmentally sensitive lands in the City. The ESL Regulations apply to those developments that are located on lands containing sensitive biological resources, steep hillsides, coastal

beaches, sensitive coastal bluffs, or 100-year floodplains. The proposed project does not include coastal beaches, steep hillsides, sensitive coastal bluffs, or 100-year floodplains. However, the proposed project does include sensitive biological resources located within the project area. Therefore, the ESL Regulations are applicable to the proposed project.

City of San Diego Biology Guidelines

The City of San Diego Biology Guidelines (2002) are also provided as part of the Land Development Code. These Guidelines were formulated to aid in the implementation and interpretation of the ESL Regulations and also serve as standards for the determination of impact and mitigation under the California Environmental Quality Act (CEQA) and the California Coastal Act (CCA). As such, the Biology Guidelines would apply to the proposed project.

CITY OF SAN DIEGO MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) SUBAREA PLAN

The Multiple Species Conservation Program (MSCP) is a comprehensive habitat conservation planning program for southwestern San Diego County. The MSCP and related Subarea Plans were adopted by the City of San Diego in March 1997. The MSCP is a plan and process for the issuance of permits under the federal and state ESA and the California Natural Communities Conservation Planning Act of 1991.

A component of the MSCP is the Multiple Habitat Planning Area (MHPA). The MHPA delineates core biological resource areas and corridors targeted for conservation. Local jurisdictions, in this case the City of San Diego, implement their respective portions of the MSCP Plan through subarea plans, which describe specific implementing mechanisms for the MSCP. The proposed project is located adjacent to the Otay Mesa area of the MHPA and is subject to the guidelines identified for this area. MHPA areas located adjacent to the project alignment are illustrated in Figure 4.7-7.

The MSCP Subarea Plan contains Land Use Adjacency Guidelines to be followed by planned or existing land uses adjacent to the MHPA. The adjacency guidelines are provided to ensure minimal impacts to, and the main function of, the MHPA. Issues identified in the Land Use Adjacency Guidelines include drainage, toxics, lighting, noise, barriers, invasives, brush management, and grading/land development. The proposed project would be subject to the Land Use Adjacency Guidelines identified in the MSCP Subarea Plan.

4.7.3 IMPACT SIGNIFICANCE CRITERIA

Based on City and/or CEQA thresholds, biological resources impacts would be significant if the proposed project:

1. Substantially affects a sensitive, rare or endangered species of animal or plant or the habitat of the species;
2. Substantially interferes with the movement of any resident or migratory fish or wildlife species; or
3. Substantially diminishes habitat for fish, wildlife or plants.

4.7.4 ISSUES 1 AND 2 – IMPACTS TO SENSITIVE HABITAT AND ANIMAL AND PLANT SPECIES

Issue 1: Would the proposal result in a direct or indirect impact to important habitat or sensitive plant or animal species?

Issue 2: Would the proposal result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?

IMPACT ANALYSIS

Implementation of OMTS project would have potential to directly and indirectly impact sensitive habitat and sensitive plant and animal species, including unique, rare, endangered, and fully protected species.

Direct Impacts

Direct impacts to biological resources resulting from construction of the proposed project, with the exception of Phase 2C, are discussed in this section. Since Phase 2C has not been surveyed, and would be located in a currently undeveloped area of Otay Mesa, this phase would have the potential to result in significant direct impacts to sensitive habitats, plants, and animals. The remainder of the project alignment would be constructed mostly in existing ROWs, with the exception of the expansion of Pump Station 23T and the construction of Pump Station A1. However, it is possible that conflicts with existing utilities could result in the pipeline alignment occurring outside of the ROW in some locations. Once constructed, no direct biological impacts are anticipated to result from the operation of the OMTS project.

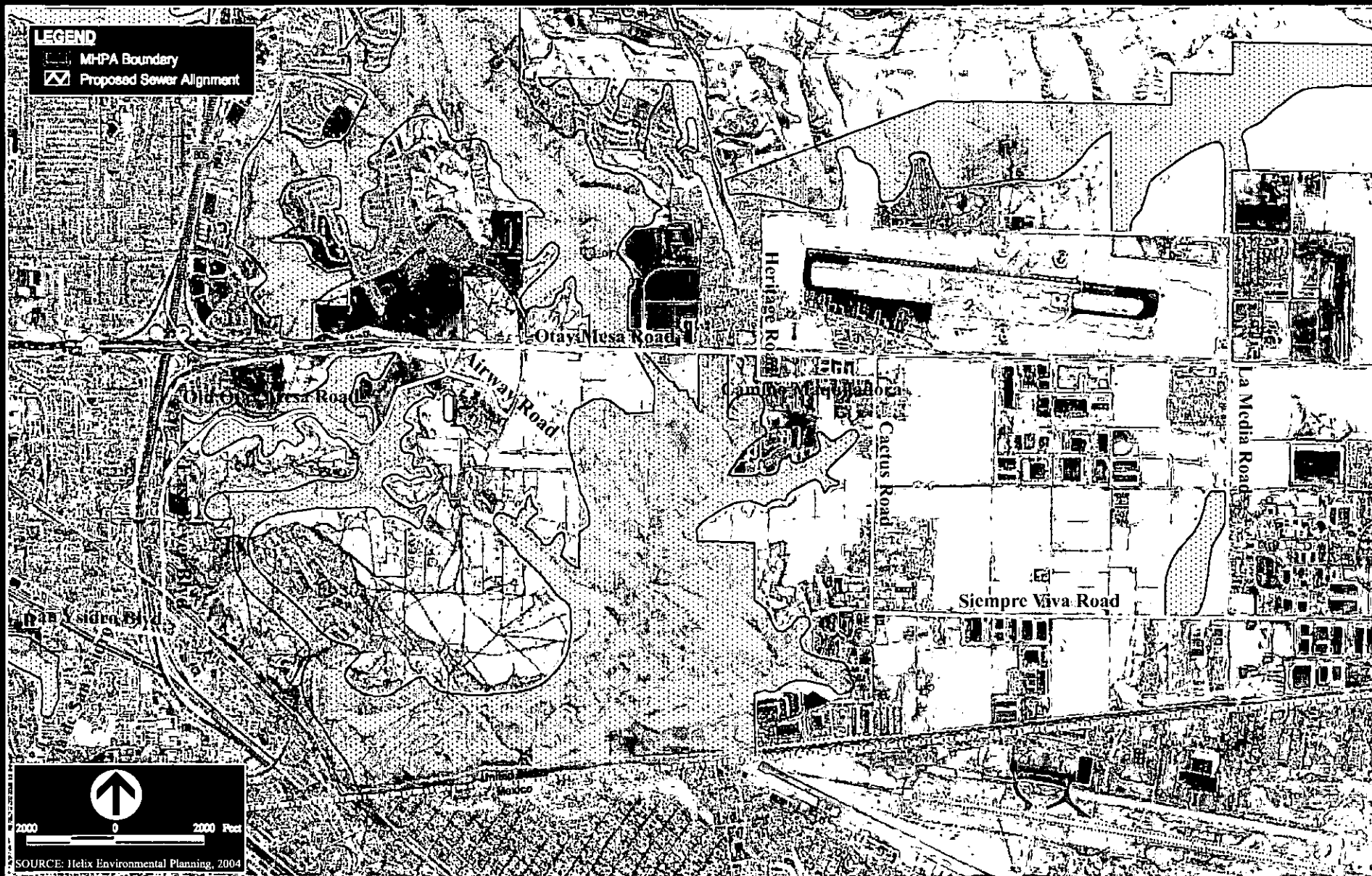
Sensitive Habitats

Sewer Pipelines

Most of the proposed sewer pipeline construction would occur within existing roadway ROW, which does not contain important habitat or sensitive plant or animal species. Approximately 70.7 acres of developed land and 7.1 acres of disturbed habitat would be impacted by project construction activities. Both of these land types are City Tier IV habitats, which do not require mitigation for construction impacts. In addition, construction staging areas and soil stockpile locations would be located within the roadway ROW, which was surveyed as part of the 300-foot biological resources study corridor. Therefore, impacts associated with the staging areas have been included as part of the impacts identified above for the proposed project. The majority of roadway ROW does not contain sensitive biological resources.

It is possible that during construction, the project's disturbance area may occasionally extend outside of the ROW into sensitive habitat areas. Habitat areas located along the proposed alignment include those habitats listed in Table 4.7-1. Many of these habitats are Tier I, Tier II, Tier IIIA, and Tier IIIB habitats as designated under the City's ESL categorized tier system. If construction of the proposed project would impact any of the habitat types listed in Table 4.7-1, the proposed project would result in a significant impact to sensitive vegetation communities.

An MHPA wildlife corridor, connecting Dennerly Canyon to the north and Spring Canyon to the south, is located under the intersection of Otay Mesa Road and Corporate Center Drive. The wildlife corridor is a 72-inch-diameter culvert located approximately 10 to 15 feet below the paved surface of Otay Mesa Road. The proposed project would install force mains in this portion of Otay Mesa Road during Phases 2D, 2E and 3.



CITY OF SAN DIEGO MHPA IN OTAY MESA AREA

FIGURE 4.7-7

The construction of the force mains would be designed to avoid the wildlife corridor by installing the sewer pipelines above or below it. The project would not result in the closure or relocation of the wildlife corridor. Therefore, the project would not result in direct impacts to the MHPA wildlife corridor under Otay Mesa Road.

The proposed project would be located within roadway ROW and would not impact the Otay or Remington Hills mitigation areas. The Otay mitigation site is located in Spring Canyon to the south of Otay Mesa Road. The Remington Hills mitigation site is located to the north of Old Otay Mesa Road to the east of the Remington Hills residential development. The Otay and Remington Hills mitigation sites are both located outside the 300-foot biological study corridor and, therefore, would not be subject to direct or indirect project impacts.

Pump Stations

The expansion of Pump Station 23T in Phase 2B2 would include the addition of new pumps, piping and electrical switchgear to upgrade the capacity of the pump station from 2 MGD to 4 MGD. The expansion would not enlarge or alter the existing pump station footprint, which is entirely developed and contains no sensitive vegetation communities. A new aboveground structure would be constructed within the existing developed footprint. Therefore, the expansion of Pump Station 23T would not result in a significant impact to sensitive habitats.

The construction of Pump Station A1 in Phase 2E would result in a direct impact to 2.8 acres of non-native grassland. This habitat is considered by the City to be a Tier III-B habitat. As such, impacts to non-native grassland would be considered significant. No other types of sensitive habitat would be impacted by the construction of Pump Station A1.

Sensitive Plant Species

Sewer Pipelines

There are several sensitive plant species known to occur or having the potential to occur within the project vicinity, as described in Section 4.7.1.5. Some of these species are federally listed endangered, and some are City narrow endemic species, which refers to a species that is restricted to a relatively small geographic area for which conservation planning decisions would have a substantial effect on the status of the species. The majority of construction associated with the implementation of proposed project pipelines would be located within existing roadway ROW and would not result in direct impacts to sensitive plant species.

It is possible that during construction, the project's disturbance area may occasionally extend outside of the ROW into sensitive habitat areas that may contain sensitive plant species. Sensitive plant species located in the vicinity of the proposed alignment include those species listed in Table 4.7-2. If construction of the proposed project would impact any of the sensitive plant species listed in Table 4.7-2, the proposed project would result in a significant impact to sensitive plant species.

Pump Stations

The expansion of Pump Station 23T in Phase 2B2 would include the addition of new pumps, piping and electrical switchgear to upgrade the capacity of the pump station from 2 MGD to 4 MGD. The expansion would not enlarge or alter the existing pump station footprint, which is entirely developed and contains no sensitive plant species. A new aboveground structure would be constructed within the existing developed footprint. Therefore, the expansion of Pump Station 23T would not result in a significant impact to sensitive plant species.

The preferred site for Pump Station A1 is located at the southwest corner of the intersection of Cactus and Siempre Viva Roads. This site contains approximately 2.8 acres of disturbed non-native grassland. Until the site is acquired by the City, which would occur during Phase 2B3, it is the property of private owners. No sensitive plant surveys would be conducted on this site until the acquisition of the property is finalized. Since no surveys have been conducted, there is the potential for sensitive plant species to occur on the preferred Pump Station A1 site. A potentially significant impact would occur.

Sensitive Wildlife Species

Sensitive wildlife species that have been observed or have potential to occur within the project study corridor are described in Section 4.7.1.5. The federally listed endangered San Diego and Riverside fairy shrimp are known to occur in vernal pools located within the study corridor. The federally listed threatened coastal California gnatcatcher is known to occur within maritime succulent scrub and coastal sage scrub habitats within the project study corridor. The California gnatcatcher is a City MSCP covered species. The federally listed endangered Quino checkerspot butterfly has the potential to exist within the project area, as it has been seen in other sites on Otay Mesa and the appropriate habitat for this species occurs within the study corridor. In addition, burrowing owls are also known to occur in the vicinity of the proposed project.

Sewer Pipelines

The construction of sewer pipelines along the proposed project alignment would be located under existing roadways or roadway ROW, which do not contain sensitive wildlife species. Therefore, impacts to sensitive wildlife species from pipeline construction within ROW would not be anticipated to occur.

It is possible that during construction, the project's disturbance area may occasionally extend outside of the ROW into sensitive habitat areas that may contain sensitive wildlife species. Sensitive wildlife species located in the vicinity of the proposed project alignment include those species listed in Table 4.7-3. If construction of the proposed project would impact any of the sensitive wildlife species listed in Table 4.7-3, the proposed project would result in a significant impact to sensitive wildlife species.

Pump Stations

The expansion of Pump Station 23T in Phase 2B2 would include the addition of new pumps, piping and electrical switchgear to upgrade the capacity of the pump station from 2 MGD to 4 MGD. The expansion would not enlarge or alter the existing pump station footprint, which is entirely developed and contains no sensitive animal species. A new aboveground structure would be constructed within the existing developed footprint. Therefore, the expansion of Pump Station 23T would not result in a significant impact to sensitive animal species.

The preferred site for Pump Station A1 is located at the southwest corner of the intersection of Cactus and Siempre Viva Roads. This site contains approximately 2.8 acres of disturbed non-native grassland. Until the site is acquired by the City, which would occur during Phase 2B3, it is the property of private owners. No sensitive animal surveys would be conducted on this site until the acquisition of the property is finalized. Since no surveys have been conducted, there is the potential for sensitive animal species to occur on the preferred Pump Station A1 site. A potentially significant impact would occur.

Indirect Impacts

Construction and operation of the OMTS project would have the potential to indirectly impact sensitive habitat and plant and animal species due to decreased water quality and air pollution, and increased light pollution, noise and errant construction impacts. Portions of the project alignment are planned for areas that are adjacent to the MHPA (see Figure 4.7-7). Phases 2D, 2E and 3 would have the potential for short-term

indirect impacts to occur in the vicinity of the MHPA wildlife corridor between Spring Canyon and Denberry Canyon during construction activities. These impacts pertaining to the construction and operation of the proposed project are discussed further below.

Water Quality

Water quality in riparian areas could be adversely affected by potential surface runoff and sedimentation during construction. Decreased water quality may adversely affect vegetation, aquatic animals, and terrestrial wildlife that depend upon these resources. Operation of proposed Pump Station A1 may also result in reduced water quality from a decrease in impervious surfaces and runoff from parking areas. However, the as discussed in Section 4.8, Hydrology and Water Quality, the project would implement construction and permanent storm water BMPs, consistent with the NPDES Construction Permit, NPDES General Permit and the City's Storm Water Standards Manual, which would reduce water quality impacts to below a level of significance.

Air Quality

Local air quality may be adversely affected during construction by an increase in fugitive dust emissions on the project site. Fugitive dust can disperse onto sensitive vegetation, reducing the overall vigor of individual plants by decreasing their photosynthetic capabilities and increasing their susceptibility to pests or disease. In turn, the animals that are dependent upon these plants may be affected. Construction-related fugitive dust impacts to sensitive habitat, animal and plant species in the project area would be potentially significant. This impact would be reduced with mitigation measure *Air Quality – 4*, identified in Section 4.6. Operation of the proposed project would not be expected to result in a decrease in air quality.

Night Lighting

Night lighting occurring from nighttime construction activities or for nighttime security at the pump stations could cause an increased loss of native wildlife, because it may provide nocturnal predators with an unnatural advantage over their prey. Night lighting may also prevent nocturnal animals from using wildlife corridors. Impacts from construction and operational lighting at night would be considered potentially significant. This impact would be mitigated to below a level of significance with implementation of mitigation measures *Land Use – 3 and 4*.

Noise

Noise resulting from project construction or operation of pump stations may adversely affect breeding birds and mammals by causing them to temporarily or permanently leave their territories to avoid noisy activity. Such activity could cause birds to leave their nests, which may contain incubating eggs or nestlings. These eggs or nestlings could then be preyed upon by other animals or could succumb to the elements. Indirect noise impacts from construction or operational activities would be considered significant if they would affect federally or state listed species or raptors. This impact would be mitigated to below a level of significance with implementation of mitigation measures *Land Use – 5, 6, 7, 8, 8a, 8b and 8c*.

Errant Construction Impacts

Errant construction impacts would include any unplanned development or direct disturbance resulting from the construction of the proposed project. Impacts to sensitive habitats, plants or animals outside the construction area would be considered significant. This impact would be mitigated to below a level of significance with implementation of mitigation measures *Land Use – 1 and 2*, identified in Section 4.1.

SIGNIFICANCE OF IMPACT

The expansion of Pump Station A1 would result in a direct significant impact to 2.8 acres of non-native grassland and would have the potential to impact unknown sensitive plant and animal species on the pump station site. In addition, direct impacts to habitats and sensitive animal and plant species would have the potential to occur if the proposed pipeline alignment were to extend outside of the ROW. Potentially significant indirect impacts that may result from construction of the proposed project include a decrease in water and air quality, and increases in night lighting, noise, and errant construction impacts. Phase 2C has not been surveyed for biological resources, and would be located in a currently undeveloped area of Otay Mesa; therefore, this phase would have the potential to result in significant direct impacts to sensitive habitats, plants, and animals.

MITIGATION, MONITORING, AND REPORTING

Impacts to sensitive habitat and plant and animal species would be avoided or mitigated to a level less than significant with implementation of the following measures. Table 4.7-4 identifies mitigation ratios for impacts to sensitive habitats according to the City's Biology Guidelines (City of San Diego 2002). Measure **Biological Resources – 1** would reduce significant direct impacts to non-native grassland from construction of Pump Station A1 to below a level of significance. Measures **Biological Resources – 2, 2a, and 2b** provide mitigation for potential impacts to sensitive habitat, animal and plant species from construction activities with the potential to occur outside of the ROW. Measure **Biological Resources – 3** would reduce direct impacts to sensitive plant species located at the Pump Station A1 site and measures **Biological Resources – 4, 4a, 4b, and 4c** would reduce direct impacts to sensitive wildlife species located on the Pump Station A1 site. Measure **Biological Resources – 5** ensures that direct impacts to biological resources resulting from Phase 2C are mitigated in accordance with the City of San Diego Biology Guidelines. Indirect impacts related to air quality would be reduced to a level below significant with those measures described in Section 4.6, Air Quality. Night lighting, noise and errant construction impacts would be reduced to below a level of significance with measures described in Section 4.1, Land Use.

Biological Resources – 1: Prior to the City's first pre-construction meeting, direct impacts to non-native grassland located at the site of proposed Pump Station A1 shall be mitigated in accordance with the City's Biology Guidelines mitigation ratio for non-native grassland located outside of the MHPA as listed in Table 4.7-4. According to this table, mitigation for an impact to 2.8 acres of non-native grassland would consist of the purchase, dedication or conservation of 1.4 acres of mitigation land within the MHPA (2.8 acres of non-native grassland would be required if mitigated outside the MHPA).

Biological Resources – 2: Prior to the City's first pre-construction meeting for each phase of construction for the pipeline alignment, a qualified biologist shall field verify the proposed pipeline alignment to determine any areas where the alignment would be located outside of the paved roadway alignment footprintROW. If no areas would be located outside of the paved roadway alignment footprintROW, no further action shall be required. If construction activities would extend outside of the existing roadway alignment footprint, an appropriately timed field survey shall be conducted to determine if any sensitive habitats, animal or plant species would be impacted during construction. If the alignment would be located outside of the paved roadway alignment footprintROW and would impact sensitive habitats, animal or plant species, then **Biological Resources – 2a and 2b** shall be followed.

Biological Resources – 2a: If sensitive habitat would be impacted by the proposed project, the qualified biologist shall determine whether the habitat is located inside or outside of the MHPA and in what level of the City's tier system the habitat is located. Impacts to each type of habitat shall be mitigated in accordance with the City's Biology Guidelines mitigation ratios listed in Table 4.7-4. According to this table, mitigation for

impacts to sensitive habitats would consist of the purchase or dedication of land at a ratio between 0.5:1 to 4:1 from a mitigation bank or an area within the MHPA. In addition, appropriately-timed pre-construction surveys shall be conducted by a qualified biologist pursuant to state and federal protocols to determine if sensitive species are present within the sensitive habitat areas. If only sensitive habitat is impacted, and but no sensitive animal or plant species are determined to be present onsite, then the sensitive habitat shall be mitigated in accordance with Table 4.7-4, and no further action shall be required. If sensitive species are detected onsite, then mitigation measure *Biological Resources – 2c* would be implemented.

Table 4.7-4. Mitigation Ratios for Impacts to Sensitive Habitats

Vegetation Community (Tier)	Impacts and Mitigation Inside MHPA	Impacts Outside and Mitigation Inside MHPA	Project Impacts to Habitat (Acres)	Required Mitigation (Acres)
Vernal pool (N/A)	2:1 to 4:1	2:1 to 4:1	-	-
Freshwater marsh (N/A)	2:1	2:1	-	-
Mule fat scrub (N/A)	2:1	2:1	-	-
Southern willow scrub (N/A)	2:1	2:1	-	-
Seasonal pond (N/A)	1:1	1:1	-	-
Disturbed wetland (N/A)	1:1	1:1	-	-
Maritime succulent scrub (I)	2:1	1:1	-	-
Maritime succulent scrub – disturbed (I)	2:1	1:1	-	-
Diegan coastal sage scrub (II)	1:1	1:1	-	-
Diegan coastal sage scrub – disturbed (II)	1:1	1:1	-	-
Non-native grassland (IIIB)	1:1	0.5:1	2.8	1.4

N/A: Not Applicable to the City's Tier System
Source: City of San Diego, 2002

Biological Resources – 2b: If construction activities would extend outside of the existing roadway alignment footprint, and sensitive habitats would be impacted, as determined in mitigation measure *Biological Resources – 2a*, then a qualified biologist shall conduct regular monitoring visits during construction to assure that construction personnel and equipment do not encroach into any sensitive areas. The schedule for biological monitoring visits shall be determined at the pre-construction meeting for each project construction phase. To the extent feasible, construction work near vernal pool areas shall be conducted outside the rainy season and construction work near habitats of sensitive species shall be conducted outside the breeding season of those species.

Biological Resources – 2cb: If sensitive animal or plant species are observed, based on a protocol surveys performed by a qualified biologist, they shall be avoided when possible. If impacts cannot be avoided, the significance of the impacts to those species must be evaluated in a second tier document in compliance with CEQA and any significant impacts shall be mitigated based on the recommendations of the qualified biologist.

The recommended mitigation ratios in Table 4.7-4 shall be subject to change based on the project's impact on federally listed species, including (potentially) the San Diego button-celery, Otay Mesa mint, California orcutt grass, Otay tarplant, spreading navarretia, Riverside fairy shrimp, San Diego fairy shrimp, coastal California gnatcatcher, and quino checkerspot butterfly in accordance with the City's Biological Guidelines.

Biological Resources – 3: Prior to first preconstruction meeting for the construction of Pump Station A1, focused surveys for sensitive plant species shall be conducted at the Pump Station A1 site by a qualified biologist during the appropriate season as part of or prior to the project planning or design phase. Two rare plant surveys shall be conducted at the Pump Station A1 site, one in the early spring (April/May) and the other during mid to late July, to identify any federal, state, and City (narrow endemic) sensitive plant species. If sensitive plant species are observed onsite, they shall be avoided if possible. If impacts cannot be avoided, the significance of the impacts to those species shall be evaluated in a second tier document in compliance with CEQA and any significant impacts shall be mitigated based on the recommendations of the qualified biologist. Typically, impacts to any listed or City narrow endemic plants require species-specific mitigation, usually in the form of plant salvage and translocation to a suitable preserve area.

Biological Resources – 4: Prior to construction of Pump Station A1, a qualified biologist shall survey the Pump Station A1 site for the presence of suitable habitat for the following wildlife species: San Diego and Riverside fairy shrimp, quino checkerspot butterfly, and burrowing owl. If the biologist finds suitable habitat for any of these species, sensitive animal surveys for each species identified on the Pump Station site shall be conducted by a qualified biologist in accordance with the measures listed in **Biological Resources – 4a, 4b, and 4c**.

Biological Resources – 4a: If suitable habitat for San Diego or Riverside fairy shrimp is found on the Pump Station A1 site, U.S. Fish and Wildlife Service (USFWS) protocol surveys shall be required to determine the extent of these species within appropriate habitat (water holding basins) on site. Two seasons of surveys shall be required by the USFWS protocol. The surveys shall consist of two dry season surveys, two wet season surveys, or one of each. The dry season survey shall involve collecting soil samples in the summer and conducting a lab analysis to determine if fairy shrimp cysts are present. Wet season surveys shall require biweekly visits when the pools are full of water to net for adult fairy shrimp.

The City regulates impacts to vernal pools within its jurisdiction; however, it does not have the authority to permit take of listed fairy shrimp. Take of the listed fairy shrimp shall require a federal Endangered Species Act (ESA) Section 10(a) permit processed through the USFWS. In order to process a 10(a) permit, the applicant shall prepare several documents including a Habitat Conservation Plan (HCP), Environmental Assessment (EA), Alternatives Analysis (AA), Implementing Agreement (IA), and associated mitigation and habitat restoration documents.

Biological Resources – 4b: If suitable habitat for the quino checkerspot butterfly is found on the Pump Station A1 site, USFWS focused protocol surveys shall be required, which call for a pre-survey habitat assessment and approximately six weekly surveys during the quino flight period (generally early spring). The USFWS shall determine when conditions are suitable to begin surveys based on observations at several known quino sites. Similar to the San Diego and Riverside fairy shrimp, the quino checkerspot butterfly is not an MSCP covered species. Any take of this species would require an ESA Section 10(a) permit processed through the USFWS.

Biological Resources – 4c: If suitable habitat for the burrowing owl is found on the Pump Station A1 site, surveys shall be conducted during both wintering (December 1 through January 31) and nesting seasons (April 15 and July 15), unless the species is detected during the first season of surveys. If the burrowing owl is observed onsite, impacts to the species shall be avoided to the maximum extent practicable. If impacts cannot be avoided, all impacted individuals shall be relocated out of the impact area using passive or active methods approved by the wildlife agencies. Timing of any relocation activity shall be carried out prior to the nesting season (February 1 to August 31). Mitigation for impacts to occupied habitat shall be through conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management, and enhancement of burrowing owl nesting and foraging habitat per the City's MSCP and

Biological Guidelines. A management plan for the burrowing owl shall include enhancement of known historical and/or potential burrowing owl habitat, and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. The management plan shall also include monitoring of burrowing owl nest sites to determine use and nesting success; predator control; and establishing a 300-foot wide impact avoidance area (within the preserve) around conserved occupied burrows.

Biological Resources – 5: Immediately after pipeline alignments and pump station locations have been determined for Phase 2C, a comprehensive biological resources survey and analysis shall be prepared by a qualified biologist to determine if construction and/or operation of Phase 2C pipeline and pump station facilities would result in significant direct or indirect impacts to sensitive biological resources, including sensitive habitats, plant species and animal species. The report shall be submitted to the Assistant Deputy Director (ADD) of Land Development Review (LDR) for concurrent review by Environmental Analysis Section (EAS) and MSCP staff. Any direct or indirect impacts to biological resources identified as a result of Phase 2C shall be mitigated in accordance with the City's Biology Guidelines (City of San Diego 2002). Impacts shall be reduced to below a level of significance whenever possible.

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4.8 HYDROLOGY/WATER QUALITY

4.8.1 EXISTING CONDITIONS

SURFACE HYDROLOGY

The proposed project is located at the border of the Otay (10.00) and Tijuana (11.0) Hydrologic Units of the San Diego Region as defined in the San Diego Basin Water Quality Control Plan (1994), referred to as the Basin Plan. The proposed project alignment would be located mostly within the drainage area of the Tijuana Valley Hydrologic Area (HA) (11.10) of the Tijuana Hydrologic Unit (Tijuana River Watershed); however, a small portion of the alignment would also be located within the drainage area of the Otay Valley HA (10.20) of the Otay Hydrologic Unit (Otay River Watershed).

The Tijuana River Watershed is a triangular-shaped area of about 470 square miles that is drained by Cottonwood and Campo Creeks, which are tributaries to the Tijuana River. It extends from the Pacific Ocean to the west to the County of San Diego boundary with Imperial County to the east and is mostly located in the mountain-valley section. To the north, the Sweetwater and Otay River Watersheds border the Tijuana River Watershed. The Watershed's only coastal lagoon is the Tijuana Estuary, which occupies approximately 2,000 acres and is generally open to the ocean. The watershed is sparsely populated with the major population centers at San Ysidro and Campo. Annual precipitation varies from less than 11 inches near the coast to more than 25 inches farther inland near Laguna Mountain. Runoff is captured by Morena Reservoir and Barrett Lake on Cottonwood Creek. The Tijuana Valley HA is one of eight hydrologic units located within the Tijuana River Watershed and is arbitrarily divided by the United States – Mexico boundary. The proposed project alignment is located within the San Ysidro (11.11) and Water Tanks (11.12) Hydrologic Subareas (HSAs) of the larger Tijuana Valley HA.

The Otay River Watershed is a club-shaped area of about 160 square miles with the Otay River and its tributaries as the major stream system. The watershed is generally bordered to the north by the Sweetwater River watershed and to the south by the Tijuana River watershed. Much of the western portion of the hydrologic unit is urbanized including the cities of Coronado and Imperial Beach. Surface water within the Watershed eventually drains to either San Diego Bay or the Pacific Ocean. The annual precipitation generally increases landward from the coast and varies from less than 11 to 19 inches. The Coronado, Otay Valley and Dulzura HAs comprise the Otay Watershed. A small portion of the proposed project alignment, located along Heritage Road north of Otay Mesa Road, is located in the Otay Valley HA.

The proposed project alignment is located along roadways within the Otay Mesa area of the City of San Diego and generally runs in an east to west direction and is located primarily on the mesa top. The topography of the mesa area is relatively flat, with canyons that surround the mesa to the north, south and west. The canyon areas are characterized by slopes and wide deep canyons that drain the vast mesas into the Otay River Valley or toward Mexico. Due to the topography of the area, the portion of the project alignment located to the north of Otay Mesa Road within the Otay Valley HA would most likely drain to Dennery Canyon to the Otay River and eventually to San Diego Bay. Portions of the project alignment located within or to the south of Otay Mesa Road and east of Old Otay Mesa Road (within Water Tanks HSA) would likely drain to Spring Canyon which would drain to Mexico. Finally, areas of the project alignment located to the south and west of the intersection of Otay and Old Otay Mesa Roads (within the San Ysidro HSA) would likely drain to the Tijuana River and would eventually drain to Tijuana Estuary and the Pacific Ocean.

WATER QUALITY

This section discusses the existing water quality of the runoff from the proposed project area. Runoff is a term used to describe any water that runs off of a defined area. Runoff can be the result of rain, in which case it is also sometimes referred to as storm water. Runoff can also result from various other activities such as irrigation, washing, leaks in pipes, air conditioner condensation, and numerous other activities. When runoff is not the result of rain, it is sometimes referred to as non-storm water. This section describes the existing water quality of the runoff that is discharged from the proposed project areas as storm water and non-storm water, however, it is estimated that non-storm water discharges from the site are minimal.

PREFERRED PROJECT ALIGNMENT

The general hydrologic characteristics and the uses of an area have the greatest influence on the water quality runoff from that area. The primary project area includes a variety of existing uses such as roads, business and industrial facilities, parking lots, agriculture, schools, residential developments and undeveloped areas. The primary pollutants associated with these uses include heavy metals, fuel, oil, grease, and other hydrocarbons from roads and parking lots, trash and debris from all areas that are used by people, fertilizers and pesticides from agriculture, and sediment from any exposed or eroded areas. Of these pollutants, it is likely that hydrocarbons, fertilizers, and pesticides constitute the majority of pollutants generated in the project area given the types of uses in the area.

Hydrocarbons are an identified pollutant associated with the preferred project alignment because the alignment follows existing roads that accommodate a high level of vehicle traffic. Oil and grease contain a wide variety of hydrocarbons, some of which can be toxic to aquatic life even in low concentrations. These materials initially float on water and create a rainbow-colored slick or film. Hydrocarbons have a strong affinity for sediment and easily become attached to sediment particles. Parking lots can be large generators of hydrocarbons in runoff because vehicles that are not properly maintained and are left for long periods of time may deposit large amounts of oil or other fluids on the parking lot surface. These deposits can continue to accumulate until they are washed off, typically during a storm event.

Fertilizers and pesticides are also identified as a surface water pollutant because of the agricultural uses located along the preferred project alignment. Pollutant sources in agriculture include fertilizers, pesticides animal waste, plant debris, and eroded soil. Phosphorous, nitrogen, and other nutrients can over stimulate aquatic weed and algae growth. As they decay, excess weeds and algae take up oxygen in the water, which is needed by fish and other aquatic life. Most pesticides are considered to be toxic substances. Toxins can accumulate in the aquatic food chain as a larger organism eats many smaller ones that have been contaminated, also known as biomagnification. Even in very small concentrations, toxic substances can harm aquatic plants and animals. California residents purchase more than one million pounds of pesticides diazinon and chlorpyrifos each year, mostly for landscaping. These pesticides are being increasingly detected in several streams and in treated wastewater at levels that are toxic to marine life at the base of the food chain. Water quality problems are occurring as a result of pesticide runoff and improper use and disposal of these toxic chemicals.

Sediment is a common element found in any surface waters, including those that are unaffected by development or are in a natural state. Sediment is made up of tiny soil particles that are washed or blown into surface waters. Excessive sediment can be detrimental to aquatic life (primary producers, benthic invertebrates and fish) by interfering with photosynthesis, respiration, growth, and reproduction. The fine sediment particles can also act as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons.

RECEIVING WATERS

Receiving waters is a general term typically used to describe any water body such as a creek, river, lake, bay, or ocean, which receives runoff. In the context of the proposed project, it refers to those water bodies that would receive runoff from the project site. The proposed project is generally located within the Otay and Tijuana Watersheds and specifically within the Otay Valley HA and the San Ysidro and Water Tanks HSAs of the Tijuana Valley HA. Therefore, the main receiving waters for the proposed project area include unnamed tributaries within Dennery and Spring Canyons, Otay River, Tijuana River, San Diego Bay, Tijuana Estuary, and the Pacific Ocean.

OTAY VALLEY HYDROLOGIC AREA

An unnamed tributary within Dennery Canyon is the first in a sequence of receiving waters for the portion of the preferred alignment located within the Otay Valley HA of the Otay Watershed. The tributary is an ephemeral stream which primarily only flows when it rains. Waters in this stream originate from the mesa top to the south. The drainage area contains roadways, undeveloped land, industrial and residential uses. Given land uses located in the drainage area of the stream, it is likely that when it flows, the quality of its water is moderately degraded. The waters are likely to contain low concentrations of hydrocarbons, sediment, bacteria, heavy metals, pesticides, fertilizers, and trash and debris. The stream is surrounded by Dennery Canyon, which is a large area of mostly natural land that is vegetated primarily with coastal sage scrub. Much of the Canyon is located within the MHPA. Although the canyon is home to numerous wildlife species, including listed sensitive species, because the stream is dry the majority of the time, its water-related benefits to the surrounding wildlife primarily reside in the surrounding vegetation that live off of the waters it conveys. In the Basin Plan, the San Diego Regional Water Quality Control Board (RWQCB) identifies Dennery Canyon as inland surface water, and designates its beneficial uses as agricultural supply (AGR), non-contact water recreation (REC-2), warm freshwater habitat (WARM), and wildlife habitat (WILD). Dennery Canyon is also designated the potential beneficial uses of industrial service supply (IND) and contact water recreation (REC-1). Applicable beneficial use designations are defined in Table 4.8-1.

The unnamed tributary in Dennery Canyon flows into the Otay River, which is a major water body within the watershed extending from the Upper Otay Reservoir to San Diego Bay. Additional tributary creeks and canyons flow into the Otay River, including O'Neal Canyon, Salt Creek, Johnson Canyon, Wolf Canyon, and Pogi Canyon. The drainage area of the Otay River includes the Otay River Valley as well as portions of the County of San Diego and the cities of San Diego and Chula Vista. The Otay River drainage area currently supports a mix of extractive, industrial, agricultural, residential, open space and public utility uses. Due to the runoff from these major land uses, the water quality of the Otay River is degraded, and could be expected to contain low concentrations of hydrocarbons, sediment, bacteria, heavy metals, pesticides, fertilizers, and trash and debris. A large portion of the Otay River Valley is part of the MSCP effort that provides habitat for a wide range of endangered plant and animal species. In the Basin Plan, the RWQCB identifies Otay River as an inland surface water, and designates its beneficial uses as agricultural supply (AGR), non-contact water recreation (REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and rare, threatened or endangered species (RARE). The Otay River is also designated the potential beneficial uses of industrial service supply (IND) and contact water recreation (REC-1).

The ultimate receiving water for runoff from all of the areas within the Otay Valley HA is San Diego Bay. San Diego Bay is a large, tidally influenced bay, with a wide opening to the Pacific Ocean. The major freshwater discharges into San Diego Bay are the Sweetwater River, Otay River, Switzer Creek, Chollas Creek, Paradise Creek, downtown and Point Loma surface drainage, and approximately 200 storm drains. The Bay supports a variety of uses including recreational boating, commercial shipping, commercial boating, cruise liners, yacht mooring, shipbuilding and repair, and military bases. Because of the numerous urban uses

Table 4.8-1. Applicable Beneficial Use Designations

Designation	Abbrev.	Definition
Industrial Service Supply	IND	Includes uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well re-pressurization.
Navigation	NAV	Includes uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.
Contact Water Recreation	REC-1	Includes uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and SCUBA diving, surfing, white water activities, fishing, or use of natural hot springs.
Non-contact Water Recreation	REC-2	Includes the uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
Commercial and Sport Fishing	COMM	Includes the uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.
Warm Freshwater Habitat	WARM	Includes uses of water that supports warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife, including invertebrates.
Estuarine Habitat	EST	Includes uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
Marine Habitat	MAR	Includes uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
Wildlife Habitat	WILD	Includes uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife, or wildlife water and food sources.
Preservation of Biological Habitats of Special Significance	BIOL	Includes uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.
Rare, Threatened, or Endangered Species	RARE	Includes uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
Migration of Aquatic Organisms	MIGR	Includes uses of water that support habitats necessary for migration, acclimatization between fresh and salt water, or other temporary activities by aquatic organisms, such as anadromous fish.
Shellfish Harvesting	SHELL	Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes.

within its watershed, as well as the numerous other uses of its shoreline and waters, the water quality of the Bay is subject to many impacts. Pollutants in runoff from the watershed are those typical to urban runoff including trash, oil and grease (hydrocarbons), heavy metals, nutrients & fertilizers, sediment, pesticides, and bacteria. The uses that occur within the Bay and along its shoreline can also introduce numerous pollutants such as trash from all uses, hazardous materials and other products from loading and unloading areas, hydrocarbons from boats, ships, fueling docks, and boatyards, and heavy metals from boat hull treatments, hull cleaning, and boat maintenance. While several portions of the Bay have been identified as impaired by the RWQCB pursuant to Section 303(d) of the Clean Water Act, the mouth of the Otay River at the southeast end of the Bay is not one of these. Beneficial uses designated for the Bay by the RWQCB include industrial service supply (IND), navigation (NAV), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), preservation of biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), and shellfish harvesting (SHELL).

TIJUANA VALLEY HYDROLOGIC AREA

An unnamed tributary within Spring Canyon is the first in a sequence of receiving waters for the portion of the preferred alignment located within the San Ysidro HSA of the Tijuana Valley HA within the Otay Watershed. The tributary is an ephemeral stream which primarily only flows when it rains. Waters in this stream originate from the mesa tops to the east and west of the canyon as well as from other tributary canyons including Dillion, Finger and Wruck Canyons. Surface drainage occurs primarily as non-point overland flow and moves south and west to the Tijuana River (Otay Mesa Road Widening EIR 1996). The drainage area contains roadways, undeveloped land, industrial and residential uses. Given the land uses located in the drainage area of the Canyon, it is likely that when it flows, the quality of its water is moderately degraded. The waters are likely to contain low concentrations of hydrocarbons, sediment, bacteria, heavy metals, pesticides, fertilizers, and trash and debris. *The ephemeral stream is surrounded by Spring Canyon, which is a large area of mostly natural land that is vegetated primarily with coastal sage scrub and disturbed habitat. Much of the Canyon is located within the MHPA. Although the canyon is home to numerous wildlife species, including listed sensitive species, because the stream is dry the majority of the time, its water-related benefits to the surrounding wildlife primarily reside in the surrounding vegetation that live off of the waters it conveys. In the Basin Plan, the RWQCB identifies Spring Canyon as inland surface water, and designates its beneficial uses as agricultural supply (AGR), non-contact water recreation (REC-2), warm freshwater habitat (WARM), and wildlife habitat (WILD). Spring Canyon is also designated the potential beneficial uses of industrial service supply (IND) and contact water recreation (REC-1).*

Spring Canyon drains to the south into the Tijuana River, at a location to the south of the U.S. – Mexico border. From this point, the Tijuana River flows in a northwest direction and crosses the border into the United States just west of I-5. Portions of the project alignment located within the Water Tanks HAS would drain directly to the Tijuana River. The Tijuana River is the major water body within the Tijuana River Watershed. The headwaters meander in a westerly direction between Mexico and the U.S. to the Tijuana River Estuary and eventually the Pacific Ocean. Tributary canyons and streams draining to the River and located to the west of I-5 include Moody Canyon, Smugglers Gulch and Goat Canyon. Tributary streams and canyons draining to the River and located to the west of I-5 include Spring Canyon, Cottonwood Creek, Tecate Creek, Kitchen Creek, Long Canyon, Troy Canyon, Fred Canyon, Horse Canyon, La Posta Creek, and Simmons Canyon. Land uses within the drainage area include residential, commercial, industrial, public facilities and utilities, parks, open space, agriculture and undeveloped land. The Tijuana River has been identified as impaired by the RWQCB pursuant to Section 303(d) of the Clean Water Act for the following non-point and point source pollutant/stressors: bacteria, eutrophic conditions, organic enrichment/low dissolved oxygen, pesticides, solids, synthetic organics, trace elements, and trash. The primary sources of the impairment have been identified as point sources and non-point sources of untreated industrial and domestic wastewater located in Mexico. Beneficial uses of the Tijuana River include non-contact water recreation

(REC-2), warm freshwater habitat (WARM), wildlife habitat (WILD), and rare, threatened or endangered species (RARE). The Tijuana River is also designated the potential beneficial uses of industrial service supply (IND) and contact water recreation (REC-1).

The Tijuana River flows into the Tijuana Estuary, which is a small intertidal coastal estuary located in the City of Imperial Beach. The estuary is primarily a shallow-water habitat, though it is often termed an "intermittent estuary" as it is subjected to extreme changes in streamflow at different times of the year. Extended periods of drought leave parts of the estuary dry during some periods, while flooding inundates the same areas during others. The Tijuana Estuary, located within the San Ysidro HSA, is considered to be a coastal lagoon by the RWQCB. Land uses within the Estuary drainage area include residential, public facilities and utilities, parks, and open space. According to the 2002 California 303(d) list, the Tijuana River Estuary is listed as an impaired water body for the bacteria, eutrophic conditions, lead, nickel, organic enrichment and low dissolved oxygen, pesticides, thallium and trash. Beneficial uses of the Tijuana Estuary include water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), preservation of biological habitats of special significance (BIOL), estuarine habitat (EST), wildlife habitat (WILD), rare, threatened, or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), and shellfish harvesting (SHELL).

REGULATORY CONTEXT

A number of local and state regulations govern the proposed project with respect to hydrology and water quality. A brief description of these regulations is provided below.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

Surface, ground and coastal water quality are regulated by the State Water Resources Control Board (SWRCB) and nine RWQCB under the authority of the federal Clean Water Act and the State of California Porter-Cologne Act. The NPDES program is a set of permits that apply to various activities that generate pollutants with potential to impact water quality. The NPDES permits cover all construction and subsequent drainage improvements that disturb one acre or more, industrial activities, and municipal separate storm drain systems. Construction and industrial activities are typically regulated under statewide general permits that are issued by the SWRCB.

Watershed Urban Runoff Management Plans (WURMPs)

On February 21, 2001, the SDWQCB issued the Municipal Storm Water Permit Order 2001-01 (Municipal Permit) to control waste discharges in urban runoff from the Municipal Separate Storm Sewer Systems (MS4) that drain into the watersheds of the County of San Diego, incorporated cities of San Diego County and the San Diego Unified Port District (jointly referred to as "Copermittees"). In part, the Municipal Permit requires that the Jurisdictions within a watershed ("Watershed Copermittees") collaborate on the development of a Watershed Urban Runoff Management Program (WURMP) for each watershed, which addresses high priority stormwater quality issues found within the various watersheds. The Copermittees jointly developed Final WURMP Model Guidance to be used to facilitate the development of WURMPs, for nine (9) watersheds, and also developed a Unified WURMP Document that addresses common program components.

The WURMPs prepared by each Watershed Copermittee Workgroup were completed on January 31, 2003, and submitted to the RWQCB. As required by the Municipal Permit, each subsequent year, the Copermittees are required to prepare an Annual Report, which outlines what progress has been made in the implementation of the programs outlined in each WURMP. The San Diego Bay and Tijuana Rivershed WURMPs are applicable to the proposed project.

City of San Diego Jurisdictional Urban Runoff Management Program

The City is covered under the Municipal Permit for discharges from its storm drain conveyance system. In accordance with the provisions of this permit, the City has developed and implemented a comprehensive jurisdictional Urban Runoff Management Program (URMP).

The URMP includes a number of programs that are implemented by the City. These programs include the specification, requirement, and enforcement of the implementation of Best Management Practices (BMPs) to reduce the risk of non-storm water and pollutant discharges for facilities and activities managed by the City, as well as those conducted by businesses and residents. The URMP also includes programs related to construction activities, and the reduction of non-storm water and pollutant discharges during those activities.

As part of the City's URMP, the City has developed *guidelines for the implementation of BMPs at its various public facilities*. Specific guidelines have recently been developed for the Park and Recreation Department for implementation at its parks, including Balboa Park. Once constructed, the portions of the proposed project that are not within the leaseholds would be managed and maintained based on these or similar subsequent guidelines.

The municipal NPDES permit also requires that the City implement storm water regulations for new development that are to be presented in a document referred to as the Standard Urban Stormwater Mitigation Plan (SUSMP). The City's SUSMP regulations are described in greater detail in the City Storm Water Standards Manual section below.

General Construction Activity Storm Water Permit

Construction activities resulting in the disturbance of more than one acre are required to comply with the NPDES general permit for storm water discharge associated with construction activity. Based on current regulations, a Notice of Intent (NOI) must be submitted to the SWRCB for consideration under a General Construction Activity Storm Water Permit. This permit requires applicants to develop, implement and monitor a SWPPP consisting of BMPs to eliminate or reduce pollutants in non-point source storm water discharges. The proposed project would be required to comply with the General Construction Activity Storm Water Permit.

General Industrial Storm Water Permit

Sites engaged in industrial activities, which are broadly defined to include a variety of industrial and non-industrial activities typically dealing with raw goods, are required to comply with the NPDES general permit for storm water discharge associated with industrial activity. Based on current regulations, a NOI must be submitted to the SWRCB for consideration under a General Industrial Storm Water Permit. This permit requires applicants to develop, implement and monitor a SWPPP consisting of BMPs to eliminate or reduce pollutants in non-point source storm water discharges. In addition, a monitoring program to visually monitor and sample discharges from the site is also required.

REGIONAL WATER QUALITY CONTROL BOARD BASIN PLAN

The San Diego RWQCB Basin Plan sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. The beneficial uses of the receiving waters affected by the proposed project are described in the previous section.

CITY OF SAN DIEGO MUNICIPAL CODE

Storm Water Management and Discharge Control

The City sets forth requirements prohibiting discharge of non-storm water and pollutants and requiring the reduction of pollutants in storm water in Municipal Code Sections 43.0301 through 43.0312. This section of the Municipal Code includes the requirements that any person engaged in activities that may result in the discharge of pollutants must undertake all measures to the maximum extent possible to reduce risk of non-storm water and pollutant discharges.

Storage of Hazardous Materials

Hazardous material storage is regulated by the City's Fire Code (City of San Diego Municipal Code Section 55.0101 through 55.9201). The San Diego Fire Code has adopted provisions of the Uniform Fire Code (UFC) (UFC 1994) with respect to storage requirements for hazardous materials. In accordance with Section 8003 of the UFC, secondary containment is required for the storage of solid and liquid hazardous materials.

Grading and Erosion Control

The City's requirements for grading and land development, including specifications for grading permits, are provided in Land Development Code Sections 142.0101 through 142.0149. In accordance with these requirements, the City must review and approve grading plans as well as landscaping plans. Grading plans must include procedures to control erosion and minimize sediment runoff draining from land undergoing development.

Storm Water Runoff and Drainage Regulations

In the Land Development Code, Sections 142.0201 through 142.0230, are the City's Storm Water Runoff and Drainage Regulations. Essentially the same as the Grading Regulations, this portion of the Code requires that all development include procedures and design to prevent erosion and stop sediment and pollutants from leaving the property to the maximum extent practicable.

City Storm Water Standards Manual

The City of San Diego Storm Water Standards Manual provides information to applicants for projects processed through the Development Services Department (DSD), on how to comply with the permanent and construction storm water quality requirements for new development projects in the City of San Diego. This manual further guides the project applicant through the selection, design, and incorporation of storm water Best Management Practices (BMPs) into the project's design plan.

4.8.2 IMPACT SIGNIFICANCE CRITERIA

Based on City and/or CEQA thresholds, hydrology and water quality impacts would be significant if the proposed project:

- Would result in substantial pollution or contamination of surface or groundwater; and/or
- Would result in substantial erosion and subsequent sedimentation of downstream water bodies.

4.8.3 ISSUE 1 – POLLUTANT DISCHARGES

Issue 1: Would the proposal result in an increase in pollutant discharges, including downstream sedimentation to receiving waters during or following construction?

IMPACT ANALYSIS

Impacts from Construction Activities

Construction of the proposed project is described in the Project Description, Chapter 3 of this EIR. Construction of the project could have short-term impacts on surface water quality through activities that include trenching, boring, removal and replacement of asphalt surfaces, stockpiling of soils and materials, and construction/expansion of pump stations. In addition, the project would produce a large amount of soils that would be removed from the site and disposed of off site. In some areas, trenching during construction may occur below the water table, and would require groundwater dewatering.

Construction would involve various types of equipment such as dozers, scrapers, backhoes, other earth moving equipment, dump trucks, cranes, trucks, concrete mixers, and generators. Stockpiled soils and other construction materials would be stored outdoors during construction. Pollutants associated with construction that could result in water quality impacts include soils and debris associated with trenching activities, fuels and other fluids associated with construction equipment, other hazardous materials, concrete slurries, and asphalt materials.

These pollutants would impact water quality if they are washed off site by storm water or non-storm water, or are blown or tracked off site to areas susceptible to wash off by storm water or non-storm water. Without adequate controls, water quality impacts would occur from rain washing these pollutants off site to adjacent drainage ways; construction vehicles tracking sediment onto adjacent street where wash off to the storm drain could occur; and dewatering of collected storm water which could contain high concentrations of sediment and low levels of other pollutants.

Under the NPDES permit program, preparation of a Storm Water Pollution Prevention Plan (SWPPP) is required for construction sites greater than one acre. The SWPPP must contain a site map which shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the project. The SWPPP must list BMPs the discharger will use to protect storm water runoff and the placement of those BMPs. BMPs implemented as part of the SWPPP would include, but not be limited to, the following:

- Removal of sediment from surface runoff before it leaves the site by silt fences or other similar devices around the perimeter of the construction area.
- Diversion of runoff around the excavated area.
- Prevention of tracking soil off site at the pump station sites through use of a gravel strip or wash facilities at exit areas.
- Protection or stabilization of stockpiled soils.
- Continual inspection and maintenance of all specified BMPs through the duration of construction.
- Restoration of temporarily impacted areas as soon as construction is complete to help prevent erosion.

- Petroleum products shall only be added or changed within the designated construction staging areas. Handling of such products shall occur over plastic tarps, which, if contaminated, shall be disposed of in accordance with federal, state and local regulations regarding hazardous materials.
- Any environmentally hazardous materials shall be stored off the ground, contained in case of spills, and protected from the rain.
- Storm water collected in the trenched areas of the construction site shall not be discharged to local drainage areas unless all practicable quantities of sediment have been removed from the waters prior to discharge.

Implementation of appropriate BMPs, as part of compliance with the NPDES General Construction Permit, would protect the quality of storm water runoff by controlling runoff and by ensuring that the quality of storm water flows meets the applicable requirements of the RWQCB. Therefore, short-term impacts resulting from alterations of drainage and hydrology during construction would be less than significant.

Impacts Following Construction

Following construction, the roadways along the project alignment would be resurfaced with asphalt, which would reduce the potential for erosion and sediment discharges. Also, equipment and hazardous materials associated with construction would be removed from the site. Since the majority of the proposed project would be located underground, the sewer pipeline portion of the proposed project would not be expected to result in impacts to water quality following construction.

The only above-ground structure constructed as part of the proposed project would be Pump Station A1. The Pump Station A1 site would include the development of a small concrete parking area adjacent to the pump station building, which would be used daily by a small number of employee vehicles. The parking surfaces would have the potential to accumulate oils, grease, and other fluids from vehicles, as well as heavy metals in fluids and sediment.

The project would comply with all applicable storm water regulations, including those identified in the City Storm Water Standards Manual for compliance with the NPDES Municipal Permit. The Storm Water Standards Manual requires the implementation of permanent storm water BMPs for site design and source control for projects subject to standard project requirements. Source control BMPs may include, but would not be limited to, the following:

- Minimize impervious footprint
- Conserve natural areas and provide buffer zones between natural water bodies and the project footprint
- Minimize directly connected impervious areas
- Maximize canopy interception and water conservation

Site Design BMPs may include, but would not be limited to, the following:

- Design outdoor material storage areas and trash storage areas to reduce pollution introduction
- Use efficient irrigation systems and landscape design
- Provide storm water conveyance system stenciling and signage

Implementation of site design and source control BMPs would reduce the types and amounts of pollutants in site runoff, thereby reducing pollutant impacts to downstream water bodies. With implementation of required permanent storm water BMPs, long-term water quality impacts associated with proposed pump station A1 would not result in a significant impact.

SIGNIFICANCE OF IMPACT

The project would implement construction and permanent storm water BMPs, consistent with the NPDES Construction Permit, NPDES General Permit and the City's Storm Water Standards Manual. Therefore, impacts from project-related pollutant discharges would be below a level of significance.

MITIGATION, MONITORING, AND REPORTING

No significant impact would occur, therefore, no mitigation measures are required.

4.8.4 ISSUE 2 – SURFACE WATER AND GROUNDWATER

Issue 2: How would implementation of the proposed project affect the hydrology and water quality of the area's surface and groundwater (on site and off site)?

IMPACT ANALYSIS

CONSTRUCTION OF SEWER FACILITIES

The proposed project is the phased construction and/or upgrade of sewer facilities including sewer pipelines, a pump station, and ancillary facilities. The pipeline portion of the project would be mostly located beneath existing roadways. Once construction is finished, the roadways would be repaved and returned to pre-project conditions. Therefore, the installation of project pipelines would not affect the surface hydrology or alter the drainage patterns or runoff volume of the alignment area. Impacts would be less than significant.

The location and extent of sewer facilities associated with Phase 2C is unknown at this time and would be subject to the development plans of future projects. However, the sewer pipelines installed as a part of Phase 2C would be located beneath future roadways and would not result in alterations to surface hydrology, drainage patterns or runoff volumes of the project area. Impacts would be less than significant.

The proposed project would also involve the expansion of an existing pump station and the construction of a new pump station. The expansion of Pump Station 23T would not include site grading or excavation during construction. A new aboveground structure would be constructed to house electrical panels, but would be located above the pump station structure and would not alter the drainage pattern or hydrology of the area. The construction of Pump Station A1 would result in an increase in impervious surfaces because the pump station site is currently undeveloped. However, while the drainage pattern of the pump station site would be slightly altered from grading and building construction, the overall drainage pattern of the area would be similar to existing conditions. The hydrology of the surrounding areas would not be affected by the proposed project. Impacts would be less than significant.

Due to a shallow water table, it is possible that trenching and/or jack and boring activities would occur at or below the water table along some portions of the preferred alignment. Compliance with the NPDES General Construction Permit, as identified in the City Storm Water Standards Manual, would ensure that water quality impacts would be below a level of significance. A Storm Water Pollution Prevention Plan (SWPPP) would be prepared and implemented during construction of the proposed project. The SWPPP would identify BMPs

to prevent water quality impacts associated with dewatering activities. The SWPPP would also identify BMPs to be implemented to protect downstream areas from sediment deposition during trenching, boring, site grading and construction. These BMPs would be designed to reduce or eliminate short-term impacts to water quality that may occur through the release of pollutants from construction materials, vehicles and equipment. Therefore, construction water quality impacts would be below a level of significance.

OPERATION OF SEWER FACILITIES

Over the lifetime of the proposed sewer project, it is possible that a project pipeline may break, crack or leak, resulting in a sewage spill. Pipe leaks can occur from tree root invasion, soil slippage, seismic activity, loss of foundation due to washout, flooding and sewage back up, among other events. In the event of a pipe leak, sewage may be released to the environment, which would have the potential to affect downstream water bodies and groundwater. In order to reduce the occurrence of sewer spills, the City implemented a Sewer Spill Reduction Program in 2001. Key elements of this program include the cleaning of all 3,000 miles of the Municipal Sewerage System by March 2004, the televising of more than 1,000 miles of the oldest and most problematic sewer lines in the system, and an increase in the number of miles of sewer lines replaced or rehabilitated from 15 miles per year to 60 miles per year by 2004. As a result of the Sewer Spill Reduction Program, the number of sewage spills in the City decreased by nearly 60 percent between 2000 and 2003 (City 2004). The continued implementation of this program would help to reduce the risk of sewage spills associated with the proposed project pipelines, which in turn would reduce the risk of contaminated groundwater from sewage spills. Therefore, groundwater contamination from leaky project pipelines is anticipated to have a less than significant effect on the environment.

SIGNIFICANCE OF IMPACT

The proposed project would not contaminate groundwater during construction activities. Impacts would be below a level of significance.

MITIGATION, MONITORING, AND REPORTING

No significant impact would occur; therefore, no mitigation measures are required.

4.8.5 ISSUE 3 – IMPERVIOUS SURFACES AND RUNOFF

Issue 3: Would the proposal result in an increase in impervious surfaces and associated runoff?

IMPACT ANALYSIS

In general, construction of the sewer pipeline along the proposed alignment would not result in a change in impervious surfaces. This is because the proposed alignment would be located along existing and future roadways, which are currently covered or will be covered in the future with impervious surfaces. Upon completion of project construction, the roadways along the alignment would be resurfaced, resulting in no net increase or decrease in impervious surfaces.

The construction of Pump Station A1 would result in an increase in impervious surfaces because the pump station site is currently undeveloped. However, while the drainage pattern of the pump station site would be slightly altered from grading and building construction, the overall drainage pattern of the area would be similar to existing conditions. The hydrology of the surrounding areas would not be affected by the proposed project. Impacts would be less than significant.

As discussed in Section 2.8.3, a slight increase in impervious surfaces would occur as a result of construction of Pump Station A1. The existing pump station site is partially undeveloped and would be fully developed with impervious surfaces as a result of the proposed project. The increase in impervious surfaces at the pump station site would result in increased runoff from the site. However, the project would comply with required NPDES permit regulations, which would include implementation of construction and permanent BMPs to reduce pollutants in site runoff. Therefore, impacts associated with a slight increase in impervious surfaces would be considered less than significant.

SIGNIFICANCE OF IMPACT

Implementation of the proposed project would not substantially increase the impervious area at the proposed Pump Station A1 site or result in a substantial increase in runoff volumes from the site. Impacts would be below a level of significance.

MITIGATION, MONITORING, AND REPORTING

No significant impact would occur; therefore, no mitigation measures are required.

4.8.6 ISSUE 4 – DISCHARGES TO IMPAIRED WATER BODIES

Issue 4: Would the proposal result in the discharge of identified pollutants to an already impaired water body?

IMPACT ANALYSIS

Impaired water bodies that could be affected by the proposed project are discussed above in Section 4.8.1, Existing Conditions, under the Receiving Waters section. These water bodies are the Tijuana River which is listed as impaired for bacteria, eutrophic conditions, organic enrichment/low dissolved oxygen, pesticides, solids, synthetic organics, trace elements, and trash, and the Tijuana Estuary, which is listed for bacteria, eutrophic conditions, lead, nickel, organic enrichment and low dissolved oxygen, pesticides, thallium and trash. The primary pollutants of concern that may be discharged from the pump station site include sediment from short-term releases during construction, and hydrocarbons and heavy metals, which would be long-term impacts following construction. If uncontrolled, these pollutants could increase the impairments in the Tijuana River and Tijuana Estuary by contributing to already severe pollutant conditions. As discussed in Section 4.8.1, the project would be consistent with the requirements of the NPDES General Municipal Permit and NPDES General Construction Permit. These requirements include the implementation of construction and permanent BMPs to reduce pollutants in site runoff which may impact downstream receiving waters. Therefore, the project would not result in the discharge of pollutants into an already impaired water body.

SIGNIFICANCE OF IMPACT

The proposed project would implement construction and permanent storm water BMPs, consistent with the NPDES Construction Permit, NPDES General Permit and the City's Storm Water Standards Manual. Therefore, the project would not result in a significant impact related to the discharge of pollutants into an already impaired water body. Impacts would be below a level of significance.

MITIGATION, MONITORING, AND REPORTING

No significant impact would occur; therefore, no mitigation measures are required.

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4.9 GEOTECHNICAL CONDITIONS

This section of the EIR describes the existing geology, soils, and seismic conditions along the project alignment and analyzes the potential physical environmental effects related to seismic hazards, underlying soil characteristics, slope stability, erosion, and excavation and export of soils. Potential effects of soil conditions on air and water quality as a result of construction-related activities are discussed in Section 4.6, Air Quality, and Section 4.8, Hydrology and Water Quality, respectively. This section is based on a geotechnical analysis prepared for the Otay Mesa Trunk Sewer Master Plan Update and Alignment Study in the report *Desktop Geotechnical Study - Otay Mesa Trunk Sewer Project* (Allied Geotechnical Engineers 2003), an analysis for the design phase of Alignment 2A in the *Report of Geotechnical Investigation Otay Mesa Trunk Sewer - Alignment 2A* (Allied Geotechnical Engineers 2003), and analysis for the design of Phase 2A2 in the *Addendum Report No. 2 to Report of Geotechnical Investigation, Otay Mesa Trunk Sewer - Alignment 2A2* (Allied Geotechnical Engineers 2004). These reports are included as Appendix F of this EIR.

4.9.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The project is located in the western portion of the Peninsular Ranges geomorphic province of southern California. This geomorphic province encompasses an area that extends for approximately 790 miles, from the Transverse Ranges and the Los Angeles Basin to the tip of Baja California, and varies in width from 30 to 100 miles. The majority of this geomorphic province is characterized by northwest trending mountain ranges separated by subparallel fault zones. In general, the Peninsular Ranges are underlain by Jurassic-age metavolcanic and metasedimentary rocks and by Cretaceous-age igneous rocks of the southern California batholith. The westernmost portion of the province in San Diego County generally consists of Tertiary- and Quaternary-age sedimentary rocks. Specifically, the project area is located in the south-central portion of the San Diego Embayment, a deep sediment-filled basin that is underlain by a basement rock complex of Cretaceous age batholithic and Jurassic age metavolcanic and metasedimentary rocks.

The project area is situated on a broad level mesa that extends eastward to the San Ysidro Mountains. This area descends abruptly to the west onto the wave-cut Nestor Terrace, which underlies the community of San Ysidro. The basement rock complex forms the mountains to the east whereas the mesa is underlain by a thick sequence of sedimentary rocks ranging from Cretaceous to Holocene in age. The mesa is dissected by several tributary drainages to the Tijuana River, which include Spring, Wruck, Dillon, Moody, and Finger Canyons.

SOILS AND GEOLOGIC FORMATIONS

Soils and geologic formations that occur along the project alignment include artificial fill soils, undifferentiated alluvium and slopewash, landslide deposit, Bay Point Formation, Lindavista Formation, San Diego Formation, and Otay Formation. These soils and geologic formations are described below and are based upon the geotechnical investigations conducted by Allied Geotechnical Engineers (2003).

Artificial Fill Soils (Q_{af}) - Fill soils associated with roadway construction and the development of the surrounding areas can be anticipated to occur in various locations throughout the project area, primarily in low-lying areas and where existing roadways cross drainage canyons. The fill soils are composed of a wide variety of materials, ranging from boulder to clay-sized particles, and can be expected to vary significantly in both lateral and vertical extent and consistency. Dumped trash fill areas are located along the edges of some of the canyons containing demolition debris and household trash.

Undifferentiated Alluvium and Slopewash (Q_a and Q_{sw}) - Narrow ribbons of undifferentiated alluvial and slopewash deposits are located along the bottom of Moody, Spring, and Wruck Canyons and a broad and flat alluvial plain within the Tijuana River Valley. In these tributary canyons, the alluvial and slopewash deposits are anticipated to consist of poorly consolidated sand and gravel with interbedded soft to firm silt and clay, and ranges from a few feet to more than 15 feet in thickness. Within the Tijuana River Valley, the alluvial deposits are composed of unconsolidated fine- to coarse-grained materials derived from various sources. Along the southern margin of the valley, the materials consist of sandy and gravelly deposits with locally extensive zones of cobbles or boulders. Materials deposited by fluvial processes include silt and fine-grained sand that have been transported from greater distances upstream. These two different types of deposits interfinger and overlie one another resulting in a complex pattern of layering and channeling.

Landslide Deposit (Q_L) - Numerous landslides have been mapped in the central portion of the project area. The majority and most significant of these slides occur east of Interstate 805, primarily in the central and lower reaches of Spring, Moody, and Wruck Canyons and on the west flank of Otay Mesa extending north from the International Border to the Beyer School. These slides can generally be characterized as a complex of large contiguous landslides with numerous smaller slides superimposed upon them. There is a mapped landslide in the vicinity of the intersection with Remington Hills Drive and Old Otay Mesa Road. The slides in the project area have developed within the last several hundred years to thousands of years ago, and failed primarily on near-horizontal bentonite beds within the Otay Formation. Studies performed on some of the large slides indicate that their basal failure surface extends below sea level. Landslide debris consists of soil/rock materials in which they have developed, and may be composed of large massive blocks to highly disturbed materials.

Bay Point Formation (Q_{bp}) - The Bay Point Formation is composed of marine, lagoonal, and non-marine sediments that were deposited on the Nestor Terrace during the late Pleistocene. This formation generally consists of poorly consolidated fine-grained sandstone with some localized beds/lenses of moderately consolidated coarse-grained sands and gravels. In addition, the published geologic map by Kennedy & Tan (1977) indicate the Bay Point Formation and an unnamed nearshore marine sandstone which consist of a light-brown, fine-grained, well-sorted to poorly sorted sandstone that is similar in appearance and composition to the Bay Point Formation. Thus, these two sedimentary deposits have been mapped as one undifferentiated unit over a broad band on the north side of the Tijuana River Valley.

Lindavista Formation (Q_L) - The Lindavista Formation rests on the top of Otay Mesa and the Border Highlands although the surficial deposits were found to contain larger clasts (up to the size of small boulders), which is not characteristic of this formation. This formation consists of nearshore marine and non-marine deposits of early Pleistocene age, and is composed of a cobble conglomerate set in a characteristically reddish-brown coarse-grained sand matrix.

San Diego Formation (T_{sdss} - sandstone unit; T_{sdcg} - conglomerate unit) - The San Diego Formation is located along most of the canyon walls throughout the mesa, in the northern portion of San Ysidro, and in the Border Highlands area. This formation consists of an upper conglomerate and lower sandstone unit. The conglomerate unit lies directly beneath the Pleistocene terrace deposits on Otay Mesa. The San Diego Formation generally consists of gravel to boulder-sized clasts in a light yellowish brown, very dense, slightly clayey to silty, fine- to coarse-grained sand matrix. The conglomerate is typically more resistant than the underlying sandstone unit resulting in steepened topography where it is present. The clasts are composed of very hard, crystalline and volcanic rock materials derived from local bedrock units and the more distant Eocene units. A late Pliocene age is assigned to this unit based on its superpositional and interfingering relationship with the well-dated sandstone unit of this formation. The underlying marine sandstone unit is

generally less resistant and consists of light yellowish brown, friable, fine-grained sandstone. Some calcium carbonate-cemented zones and fossiliferous beds are present within the sandstone.

Otay Formation (T_0) - The Otay Formation consists of alluvial fan and fluvial deposits which include three members: a lower conglomerate, a middle gritstone, and an upper sandstone/mudstone member. Based upon fossil assemblages found in these deposits, the Otay Formation has been assigned an early Oligocene age. The overlying gritstone member is generally composed of a fining-upwards sequence of coarse grained sand and gravel. This gritstone member may be present in the deepest portions of Spring Canyon. The upper sandstone/mudstone member is dominant within the project area. This member is composed of light gray, coarse-grained sandstone containing primarily angular to subrounded metavolcanic clasts that grades upward to a white to light gray, fine- to medium-grained sandstone and finally to a yellowish brown to gray, fine sandy siltstone and mudstone. Light gray bentonite clay beds up to 12 inches thick are present in the upper fine-grained material. The presence of these weak bentonite beds has resulted in the development of the extensive landslides. Outcrops of this member are located along the canyon bottoms and lower canyon walls.

CITY'S SEISMIC SAFETY STUDY

The project site is located within geologic hazard zones 12, 21, 27, 51 and 53 as shown on the City's Seismic Safety Study Geologic Hazards Maps. Zone 12 is characterized by potentially active faulting. Zone 21 is characterized by confirmed, known, or highly suspected landslides. Zone 27 is characterized by Slide-Prone Formations consisting of the Otay Formation. Zone 51 is characterized by level mesas underlain by terrace deposits and bedrock, nominal risk. Zone 53 is characterized by level or sloping terrain, unfavorable geologic structure, low to moderate risk.

FAULTING AND SEISMICITY

Ground shaking as a result of earthquakes is a potential hazard throughout southern California. The intensity of ground shaking at any particular site and relative potential for damage from this hazard depends on the earthquake magnitude, distance from the source (epicenter) and the site response characteristics (ground acceleration, predominant period and duration of shaking).

Faulting in the region is generally comprised with a number of northwest trending, predominately right-lateral strike-slip faults at the boundary between the Pacific and North American tectonic plates. The South Bay area is situated in a broad zone of northwest trending, predominantly right-slip faults that span the width of the Peninsular Ranges and extend offshore into the California Continental Borderland Province west of California and northern Baja California. At the latitude of San Diego, this zone extends from the San Clemente fault zone, located approximately 50 miles to the west and the San Andreas Fault located about 90 miles to the east. Major active regional faults of tectonic significant to the project area include the offshore Coronado Bank, San Diego Trough, San Clemente, and Rose Canyon Fault zones; the faults in Baja California, including the San Miguel-Vallecitos and Agua Blanca Fault zones; and the faults located further to the east in Imperial Valley which include the Elsinore, San Jacinto and San Andreas Fault zones.

A review of published geologic maps indicates the presence of numerous faults within the limits of the project area. Most of the faults have a relatively short mapped trace length and are discontinuous in nature. Faults located within the project area can be considered as secondary faults related to the Rose Canyon Fault zone and include the La Nacion and the Border Highlands Faults. Based on State of California classification criteria, these faults can be classified as "potentially active" faults. A potentially active fault is one that has demonstrated movement during the last 1.6 million years but not during the last 11,000 years.

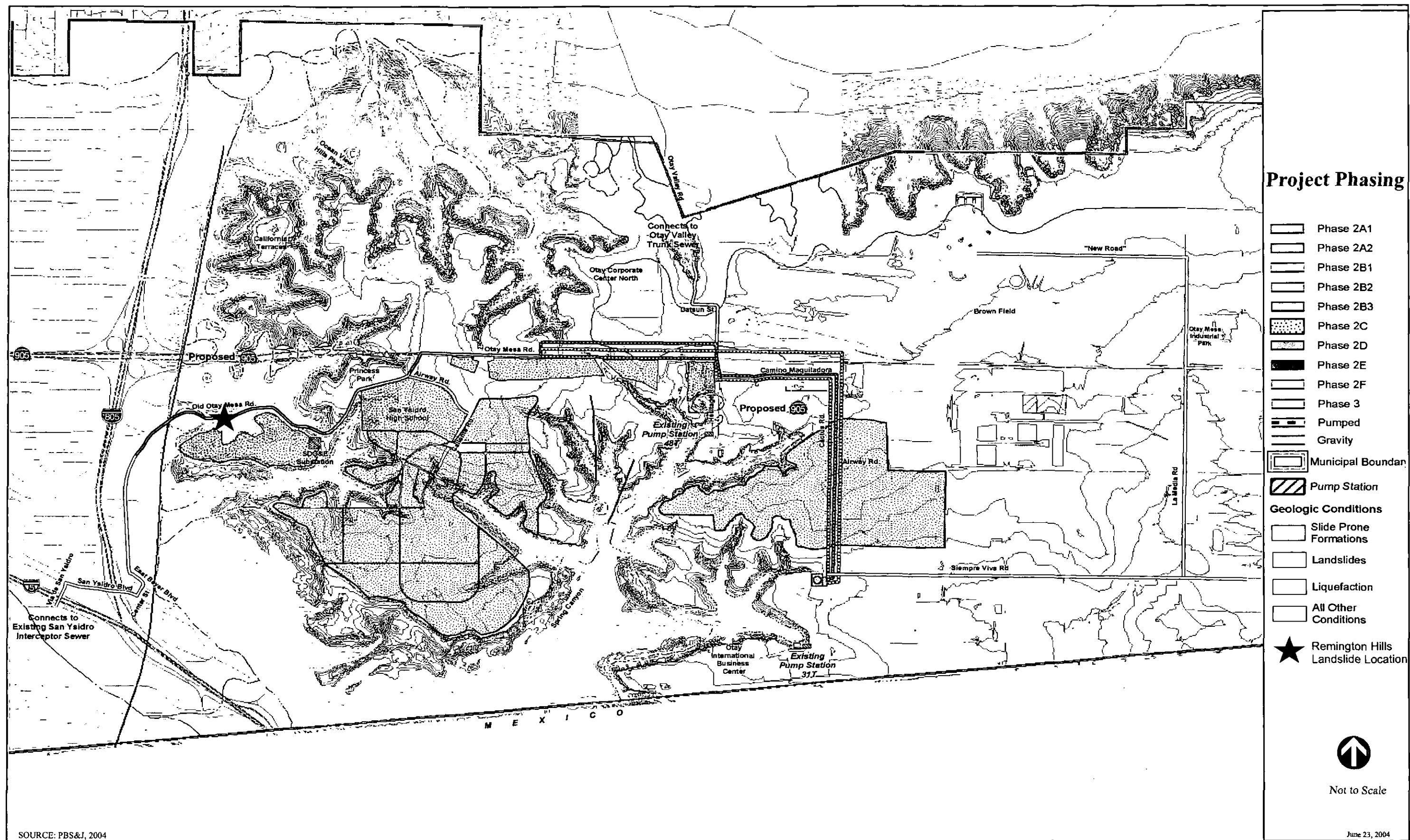
La Nacion Fault, as shown in Figure 4.9-1, is the most dominant mapped fault zone in the project area and it is comprised of several en echelon faults within a generally north-south trending broad system of faults across the central portion of the project area. These faults are generally dip-slip in nature with a down-to-the-west sense of separation. It is noted that some faults associated with the La Nacion Fault zone that are mapped just north of the International Border have been shown to be of landslide-related geomorphic features. Relatively short, discontinuous north and west-northwest trending faults have been mapped in the upper reaches of Spring Canyon and Wruck Canyon in the southeastern portion of the project area. These faults have a limited mapped trace length, and there is no evidence that they displace geologic units that are younger than Pliocene in age. Mapped faults in the western portion of the project area include a north-trending, relatively short discontinuous fault located roughly 800 feet west of Smythe Avenue. This fault is shown to offset sedimentary rocks of the Bay Point Formation and the San Diego Formation, as well as being related to the La Nacion Fault zone. A cluster of small and very short discontinuous faults have been mapped in the vicinity of Del Sol Boulevard and Beyer Boulevard.

The nearest mapped major active fault to the project site is the southern offshore extension of the Rose Canyon Fault zone. The Rose Canyon Fault zone is a complex set of anastomosing and en echelon, predominantly strike slip faults that extend from off the coast near Carlsbad to offshore south of downtown San Diego. The primary faults within the Rose Canyon Fault zone offshore of the Tijuana River Valley are projections of the Silver Strand, Coronado, and Spanish Bight Faults. Several fault strands within the Rose Canyon Fault zone have shown evidence of multiple Holocene earthquakes and thus have been classified as active faults and are included in Alquist Priolo Special Studies Zones.

Historical seismicity of the San Diego area has been relatively low compared to other areas of southern California and northwestern Baja California in Mexico. Only a limited number of small earthquake events have been reported in the area during the period of instrumental record in the early 1900s. Local earthquake epicenters that have been interpreted to be associated with the Rose Canyon Fault zone include a series of small to moderate earthquakes in July of 1985 and the largest reported event was a magnitude 4.2 generally centered in San Diego Bay. Due to the relative seismic quiescence, the Rose Canyon Fault zone is considered to be in the middle of an interseismic cycle. In contrast, the surrounding region of southern California and northwestern Baja California have had a higher rate and intensity of seismic activity. Many moderate to large earthquakes have occurred within the region during the last 50 to 100 years. The San Jacinto and San Miguel-Vallecitos faults have been the sources of significant historic earthquakes. Other major active faults producing earthquakes with a magnitude greater than 4 include the Lake Elsinore and Coronado Bank faults. Other more distant, active faults that are considered potential sources of seismic activity include the offshore San Diego Trough and San Clemente fault zones and some of the faults in Imperial Valley which include the San Jacinto and San Andreas fault zones. A summary of seismic source characteristics for faults that present the most significant seismic hazard potential to the project area is presented in Table 4.9-1.

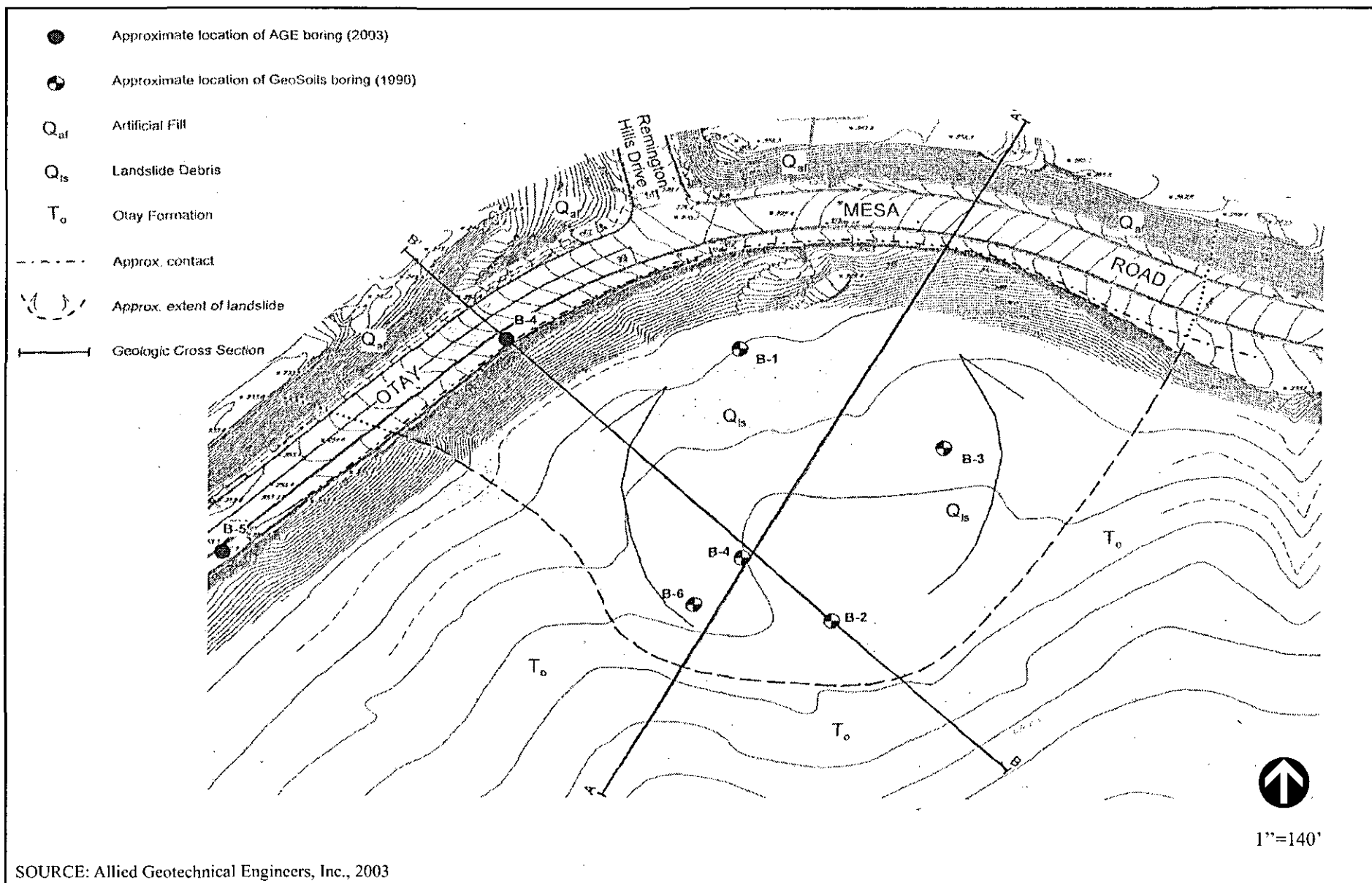
LANDSLIDES

A review of published geologic maps indicates the presence of numerous large bedrock landslides in the major canyons and on the west flank of Otay Mesa. The majority of the landslides are located in undeveloped areas and have not been studied in detail. One mapped landslide is located within the vicinity of the intersection with Remington Hills Drive and Old Otay Mesa Road as shown in Figure 4.9-2. The cross-section of the landslide along Old Otay Mesa Road is illustrated in Figure 4.9-3. As shown in this figure, the base of the landslide beneath Old Otay Mesa Road varies from approximately 14 feet to 20 feet in the eastern portion of the landslide. This landslide is considered to be ancient and marginally stable under static conditions (Allied Geotechnical Engineers, Inc. 2003).



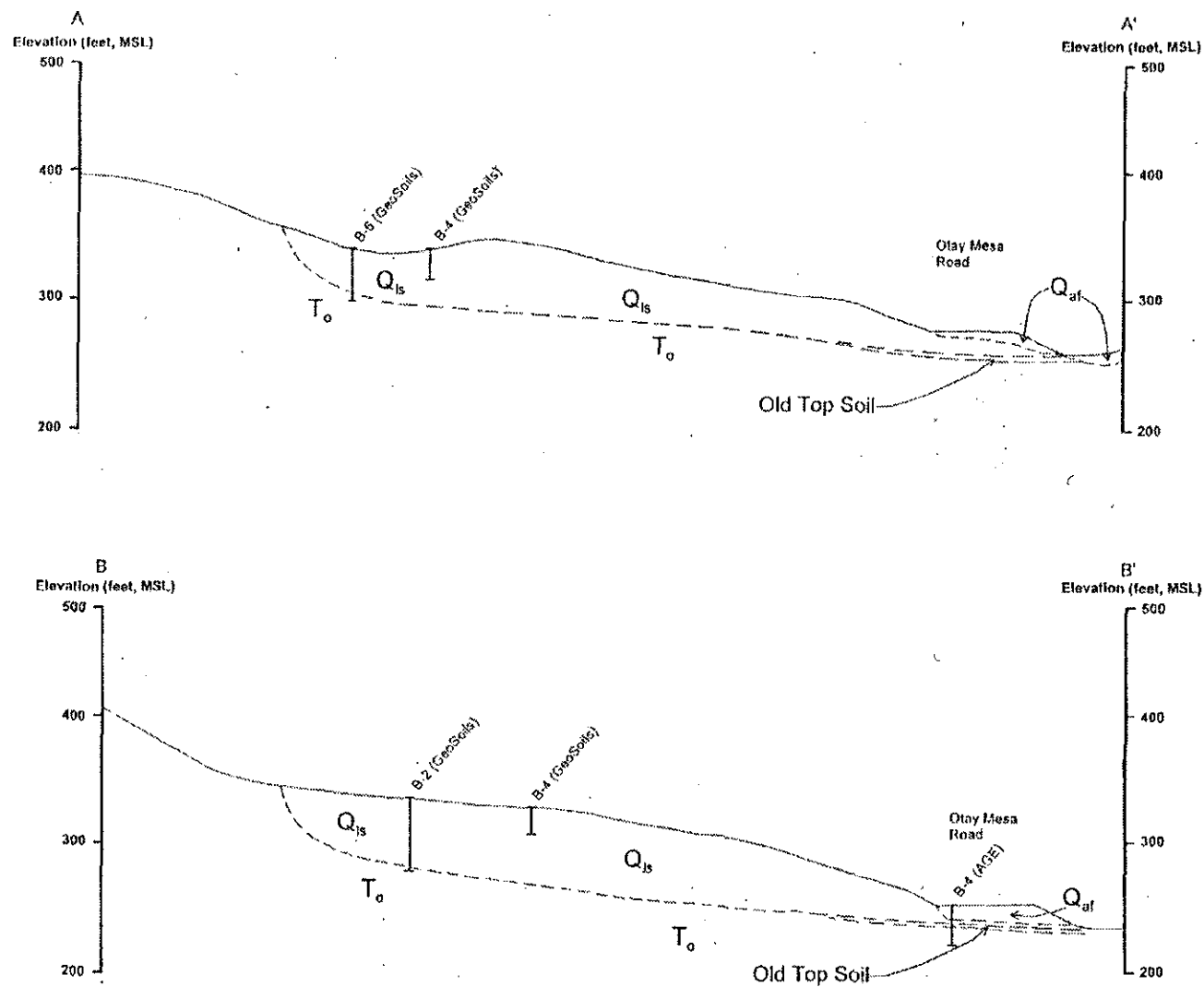
GEOLOGIC HAZARDS MAP OF THE OTAY MESA AREA

FIGURE 4.9-1



POTENTIAL LANDSLIDE AREA NEAR
REMINGTON HILLS DRIVE AND OLD OTAY MESA ROAD

FIGURE 4.9-2



SOURCE: Allied Geotechnical Engineers, Inc., 2003

**CROSS-SECTIONS OF THE POTENTIAL LANDSLIDE AREA
NEAR REMINGTON HILLS DRIVE AND OLD OTAY MESA ROAD**

FIGURE 4.9-3

Table 4.9-1. Seismic Source Characteristics

Fault	Maximum Magnitude (Mw)	Total Length (miles)	Slip Rate (mm/year)	Closest Distance to Project Site (miles)
La Nacion	6.5	16	0.05	0.0
Rose Canyon	7.0	80	1.5	4.0
Coronado Bank	7.5	86	3.0	14
San Andreas (south)	7.5	120	24	92
San Clemente	7.0	6	1.5	50
San Jacinto	7.5	120	17	66
San Diego Trough	7.5	91	1.0	21
San Miguel - Vallecitos	7.0	109	0.5	19

Source: Allied Geotechnical Engineers, Inc., May 28, 2003.

Other landslides exist in the central and lower reaches of Spring and Wruck Canyon. These consist of a series of large contiguous slides that extend a distance of about 1.5 miles. Individual landslides within these series vary in width from 300 to 1000 feet and extend in elevation as much as 250 feet above the canyon floor. Much larger landslides up to 175 acres in size occur on the west flank of Otay Mesa. Subsurface investigations performed near the base of the largest of these slides indicate that its basal failure surface extends to a depth of 10 to 15 feet below sea level.

Most of the larger canyons draining Otay Mesa cut through the cap rock of the Lindavista and San Diego Formations and expose the underlying Otay Formation in the lower canyon walls. While the Otay Formation is comprised primarily of massively to well-bedded fine sandstones, bentonite clay beds varying in thickness from a few inches to several feet, occur as interbeds that can be traced continuously for miles along the canyon walls.

Two important characteristics of bentonite clays are their low shear strength and tendency to exhibit extensive horizontal shears termed "bedding parallel shear". The significance of these shear zones is they contribute to the conditions leading to massive deep-seated landsliding along major drainages such as Otay Valley, Spring Canyon, Wruck Canyon, Moody Canyon, and the Tijuana River Valley just east of the community of San Ysidro.

GROUNDWATER

The depth to groundwater varies greatly from one location to another within the limits of the project area. The exact depth of the regional water level beneath the top of the mesas of the project area is unknown. Based on groundwater information obtained during regulatory file reviews conducted at the San Diego County DEH, groundwater beneath the project alignment is present at depths ranging from less than 10 feet beneath the surface in the western portion of the alignment to as deep as 200 feet beneath the surface in the vicinity of Brown Field (Rincon Consultants 2003). Groundwater flow direction varies throughout the subject alignment. Groundwater depth beneath the project alignment varies due to local faulting, seasonal rainfall, local irrigation practices, and other factors. Localized perched water conditions are likely to develop during the wet season in some of the drainage canyon areas. However, limited information is available regarding the occurrence of groundwater in the major canyons.

4.9.2 REGULATORY FRAMEWORK

Regulations pertaining to water quality are included in Section 4.8 Hydrology/Water Quality of this EIR.

UNIFORM BUILDING CODE

The Uniform Building Code (UBC) is a model building code that provides the basis for the California Building Code. The UBC defines different regions of the United States and ranks them according to their seismic hazard potential. There are four types of these regions, which include Seismic Zones 1 through 4, with Zone 1 having the least seismic potential and Zone 4 having the highest seismic potential.

CALIFORNIA BUILDING CODE

The State of California provides a minimum standard for building design through the California Building Code (CBC). The CBC is based on the UBC, with amendments for California conditions. Chapter 23 of the CBC contains specific requirements for seismic safety. Chapter 29 of the CBC regulates excavation, foundations, and retaining walls. Chapter 33 of the CBC contains specific requirements pertaining to site demolition, excavation, and construction to protect people and property from hazards associated with excavation cave-ins and falling debris or construction materials. Chapter 70 of the CBC regulates grading activities, including drainage and erosion control. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in Cal-OSHA regulations (Title 8 of the California Code of Regulations [CCR]) and in Section A33 of the CBC.

SEISMIC HAZARDS MAPPING ACT

The California Geologic Survey, formerly the California Department of Conservation, Division of Mines and Geology (CDMG), provides guidance with regard to seismic hazards. Under CDMG's Seismic Hazards Mapping Act (1990), seismic hazard zones are to be identified and mapped to assist local governments in land use planning. The intent of this publication is to protect the public from the effects of strong ground shaking, liquefaction, landslides, ground failure, or other hazards caused by earthquakes. In addition, CDMG's Special Publications 117, "Guidelines for Evaluating and Mitigating Seismic Hazards in California", provides guidance for the evaluation and mitigation of earthquake-related hazards for projects within designated zones of required investigations.

4.9.3 IMPACT SIGNIFICANCE CRITERIA

The criterion below for geotechnical impact significance is based upon the City and CEQA thresholds. Implementation of the proposed project would have a significant adverse impact if it would:

- Result in wind or water erosion of soils on- or off-site;
- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic groundshaking; seismic related ground failure, including liquefaction; or landslides.

4.9.4 ISSUE 1 – INCREASE IN WIND OR WATER EROSION OF SOILS

Issue 1: Would the proposed project result in any increase in wind or water erosion of soils either on or off the site?

IMPACT ANALYSIS

Erosion can occur as a result of, and can be accelerated by activities associated with the proposed project. Soil removal from trenching and excavation activities for the proposed pipeline alignment would reduce soil cohesion. Soils excavated for each phase would be stockpiled and would potentially be exposed to erosive forces such as wind and water. Furthermore, excavation or grading for proposed Pump Station A1 would also result in erosion during construction activities as bare soils would be exposed and would have the potential to be eroded by wind or water.

Wind Erosion

Construction. Earth-disturbing activities associated with construction would be temporary and erosion effects would depend largely on the areas excavated, the quantity of excavation, and the length of time soils are exposed to wind. The duration of construction for each phase and the quantity of excavation and spoils are summarized in Table 4.9-2.

Table 4.9-2. Project Phase Construction Duration, Excavation, and Spoils

Phase	Duration of Construction	Excavation (cu. yd.)	Spoils (cu. yd.)
2A1	3 months	25,000	5,000
2A2	5 months	30,000	10,000
2B1	11 months	40,000	6,000
2B2	17 months	30,000	4,700
2B3	N/A	N/A	N/A
2C	To Be Determined	To Be Determined	To Be Determined
2D	12 months	4,875	1,200
2E	18 months	54,000	49,000
2F	13 months	12,000	9,000
3	To Be Determined	To Be Determined	To Be Determined

Source: PBS&J, December 2003.

N/A Not Applicable

The excavation and stockpiling operation would have the potential to expose soils to wind erosion that previously would not be exposed without the project. Therefore, the construction of the proposed project would have a significant impact associated with wind erosion. However, as stated in Section 4.6, Air Quality, dust control measures would be implemented and consistent with the San Diego Air Pollution Control District (SDAPCD) regulations. With the implementation of wind erosion measures the project's construction impacts would be less than significant.

Operation. Upon completion of construction, the roadways would be resurfaced along the project alignment; therefore, wind erosion would not occur. The Pump Station A1 site is currently undeveloped and would be developed with impervious surfaces. Therefore, wind erosion associated with the operation of Pump Station A1 would not occur.

Water Erosion

Construction. All construction activities would comply with Chapter 29 of the California Building Code, which regulates excavation activities and the construction of foundations and retaining walls, and Chapter 70 of the CBC, which regulates grading activities, including drainage and erosion control. As stated in Section 4.8, Hydrology and Water Quality, the proposed project would comply with the NPDES general permit for construction activities, pursuant to which, as part of an erosion control plan, appropriate construction site erosion and sedimentation control BMPs would be implemented. With the continued implementation these measures, substantial erosion or topsoil loss is unlikely to occur during construction, and the associated impact would be considered to be less than significant.

Operation. Erosion can also occur in connection with the hydrology of a project. Increases in flow, typically associated with impermeable surfaces, can result in increased erosion in on- and off-site drainage courses. The impervious surfaces associated with the proposed pipeline would not result in a change in impervious surfaces since the alignment would be located underground along existing roadways which are mainly covered with impervious surfaces. The roadways would be opened for traffic during construction and then resurfaced upon completion of the project, thus resulting in no net increase or decrease in impervious surfaces. Therefore, substantial water erosion is unlikely to occur on an operational basis with the pipeline and impacts would be considered to be less than significant.

An increase in impervious surfaces would occur as a result of construction of Pump Station A1. The pump station site is currently undeveloped and would be developed with impervious surfaces as a result of the proposed project. The increase in impervious surfaces at the pump station site would have the potential to result in increased runoff from the site, if BMPs were not implemented. However, compliance with applicable NPDES permit regulations requires the implementation of permanent BMPs designed to reduce the release of pollutants from the pump station parking area. Implementation of permanent BMPs would reduce long-term water quality impacts to downstream water bodies to below a level of significance.

Any pump stations constructed as a part of Phase 2C would also be required to comply with applicable NPDES permit regulations. Therefore, no significant water quality impacts would occur.

SIGNIFICANCE OF IMPACT

The proposed project would not result in significant long-term impacts associated with wind or water erosion.

MITIGATION, MONITORING AND REPORTING

No significant impact would occur; therefore, no mitigation measures are required.

4.9.5 ISSUE 2 – UNSTABLE SOIL CONDITIONS

Issue 2: Would the proposed project expose people or property to geologic hazards such as earthquakes, landslides, mudslides, liquefaction, ground failure, or similar hazards?

IMPACT ANALYSIS

Faulting and Seismicity

Major seismic hazards affecting the project area would be seismic-induced ground shaking and potential of landslide reactivation. The project site would likely be subject to moderate to severe ground shaking in response to a local or more distant large magnitude earthquake occurring during the life of the planned facilities. The nearest mapped active fault to the project site is the southern offshore extension of the Rose Canyon Fault zone approximately four miles to the west. Investigations of the Rose Canyon Fault zone in the Rose Creek area and in downtown San Diego found evidence of multiple Holocene earthquakes (Allied Geotechnical Engineers, Inc. 2003). Based on these studies, several fault strands within the Rose Canyon Fault zone have been classified as active faults. Assuming a magnitude 7 earthquake on the Rose Canyon Fault zone, a peak horizontal ground surface acceleration of 0.39g would be used for preliminary design purposes. Vertical accelerations would be assumed to be at least 2/3 of the horizontal acceleration. The main trace of the La Nacion Fault zone is mapped crossing the western portion of the project alignment, along the west side of the landslide near Remington Hills Drive. Based on the California Division of Mines and Geology fault classification criteria, the La Nacion Fault zone may be considered as potentially active. However, geologic studies that have been performed on the La Nacion Fault zone to date have not discovered any evidence for fault activity within Holocene time (11,000 BP) (Allied Geotechnical Engineers, Inc. 2003). Based upon this information, there is a low potential for ground rupture resulting from on-site faulting.

Landslides

Areas with the potential for landslides have been identified in the vicinity of the OMTS project as shown in Figure 4.9-2. A mapped landslide is located in the Otay Formation along Old Otay Mesa Road within the vicinity of the intersection of Old Otay Mesa Road and Remington Hills Drive. The landslide would impact approximately 930 linear feet of the project alignment (Phase 2A2). The proposed pipeline would be aligned above the landslide slip plane and would go through the landslide mass. Open trench construction would be used.

The potential for future reactivation of the landslide depends primarily on future groundwater conditions in the slide area that are difficult to accurately predict at this time. If a substantial rise in the water table occurs as a result of prolonged heavy precipitation, slide reactivation is probable, particularly if a large magnitude local earthquake occurs at the same time. The future stability of the landslide also depends on grading activity associated with the future development of the properties on the south side of Old Otay Mesa Road.

Federal and Cal-OSHA safety regulations require that excavations, which exceed 5 feet in depth, be shored, braced, or protected. Design of unsupported temporary excavations would be based upon the characteristics of the soil materials and continuous shoring would potentially be required for excavations made in landslide debris. Excavations and shoring would be designed and installed in accordance with current Cal-OSHA regulations and requirements. The design and installation of temporary shoring would incorporate adequate and safe support for all existing structures and/or nearby located utilities that have the potential to be damaged by earth movement. In addition, design features would be incorporated in order to provide additional pipeline strength through the landslide area to account for potential small movements, the pipeline would be constructed of High Density Polyethylene (HDPE) material with butt-welded joints. The HDPE pipe would provide an essentially seamless (no joint) pipe through the landslide mass, which would provide some

elongation in the event of small ground movements in the landslide area. As a result, impacts related to landslides would be less than significant.

Liquefaction

Seismically induced soil liquefaction is a phenomenon in which loose to medium dense, saturated granular materials undergo matrix rearrangement, develop high pore water pressure, and lose shear strength due to cyclic ground vibrations induced by earthquakes or other means. The project area is underlain by geologic units, which are considered to have a very low susceptibility to seismic-induced soil liquefaction. Therefore, impacts related to liquefaction would be less than significant.

SIGNIFICANCE OF IMPACT

Implementation of the proposed project would not result in exposing people or property to geologic hazards such as earthquakes, landslides, mudslides, liquefaction, ground failure, or similar hazards.

MITIGATION, MONITORING AND REPORTING

No significant impact would occur; therefore, no mitigation measure is required

4.10 HAZARDOUS MATERIALS

This section addresses potential hazards and hazardous materials issues related to the construction and operation of the OMTS project. Information in the following section is based on the *Phase I Environmental Site Assessment for the Otay Mesa Trunk Sewer Alignment San Diego, California* (June 2004) prepared by Rincon Consultants, Inc. The report, provided as Appendix G, provides information regarding potential and existing hazardous materials sites within the vicinity of the proposed project.

4.10.1 EXISTING CONDITIONS

HAZARDOUS MATERIALS SITES RECORDS SEARCH

In order to determine if hazardous materials sites exist on or adjacent to the proposed project alignment, a records search of federal, state and county hazardous materials sites was conducted. Databases were searched for any sites located adjacent to or within a 1/8-mile radius of the proposed project alignment. The 1/8-mile distance was chosen to limit the number of search results to a reasonable number. The results of the database searches indicated that 203 properties located adjacent to or within a 1/8-mile radius of the subject alignment are listed on the searched regulatory databases. These databases and a brief description of the sites found on them are identified below. A complete list of the properties identified in the database searches is provided in Appendix G.

- **UST:** The Underground Storage Tank (UST) database contains listings of registered USTs. This database is maintained by the SWRCB with supplemental information provided by DEH. Twenty-three properties were identified on the UST database as either adjacent to or less than 1/8-mile from the proposed project alignment.
- **LUST:** The Leaking Underground Storage Tanks (LUST) database records contain an inventory of reported leaking underground storage tank incidents. This database is maintained by the SWRCB with supplemental information provided by the San Diego County Department of Environmental Health DEH. Twenty-two properties were identified on the LUST database as either adjacent to or less than 1/8-mile from the proposed project alignment. Thirteen of the properties are listed with open status with many of the cases reporting soil contamination and underlying groundwater as being affected. Seven of the LUST properties are listed with closed status. The physical address of a portion of the proposed alignment, 5400-5760 Otay Mesa Road, is listed on the LUST database as "Otay Mesa Road Widening." The case type is listed as a tank release with aquifer affected and a status of open/remediation.
- **RCRA GEN:** The Environmental Protection Agency's (EPA's) Resource Conservation and Recovery Information System (RCRIS) database includes selected information on sites that generate, store, treat, or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act. The Resource Conservation and Recovery Information System for Large and Small Quantity Generators (RCRA GEN) provide information about sites that create more than 100 kilograms (kg) of hazardous waste per month or meet other RCRA requirements. A search of the RCRA GEN database identified eighteen properties as either adjacent to or less than 1/8-mile from the proposed project.
- **RCRA NLR:** The EPA's database of RCRIS sites that create less than 100 kilograms of hazardous waste per month or do not meet other RCRA requirements. A search of this database identified one property that is less than 1/8-mile from the proposed project alignment.

- **ERNS:** The EPA's Emergency Response Notification System (ERNS) database includes emergency response actions that commonly pertain to onetime spill events. Four properties were identified on the ERNS database as either adjacent to or less than 1/8-mile from the proposed project alignment.
- **SWL:** The Solid Waste Information System (SWL) database contains information on active, closed, and inactive landfills as provided by the State Integrated Waste Management Board. A search of the SWL database identified four properties located adjacent to the proposed project alignment.
- **PERMITS:** This database is managed by the San Diego County DEH, Hazardous Materials Division and lists businesses that generate hazardous waste, store disclosable quantities of hazardous materials, and/or use USTs. The database also provides information pertaining to LUST cases, non-tank related releases, and violations issued during regulatory compliance inspections conducted by DEH representatives. A search of the PERMITS database identified more than 180 properties as either adjacent to or less than 1/8-mile from the proposed project alignment.

REVIEW OF AGENCY FILES

As a follow-up to the regulatory database search and the site reconnaissance, a request was filed with the DEH to review documents pertaining to the Otay Mesa Road Widening project and 16 properties located either adjacent to or within a 1/8-mile radius of the proposed alignment. File reviews were requested for properties that have reported releases of hazardous materials to either soil and/or groundwater that could potentially impact the subject alignment. The reviews were also based on the status of the release cases, apparent distance and direction from the proposed alignment, anticipated groundwater depth and flow direction, and details of these listings provided in online database managed by the DEH and the California State Water Resources Control Board (SWRCB). The regulatory files were reviewed at the DEH office on October 19, 2004. Table 4.10-1 provides a summary of the information obtained during the DEH file review of selected properties within 1/8-mile of the proposed project alignment.

REVIEW OF HAZARDOUS WASTE AND SUBSTANCES SITES (CORTESE) LIST

The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California EPA to develop at least annually an updated Cortese List. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

According to the DTSC website, updated May 12, 2004, the Cortese List contains 17 listings for San Diego County. Of these, 10 sites are located within the City of San Diego. However, none of the sites is located in the Otay Mesa area or the areas directly surrounding Otay Mesa.

REVIEW OF STATE OF CALIFORNIA DIVISION OF OIL AND GAS RECORDS

A review of the Division of Oil and Gas Munger Map Book (1999) identified two oil wells located in the vicinity of the proposed project alignment. The wells are identified as being plugged and abandoned. They include one Otay Oil Company well, which is located approximately 600 feet north of Old Otay Mesa Road near its intersection with Route 905, and one Itesco Pet Co. Ltd. well, located approximately 3,000 feet west of Cactus Road near Spring Canyon.

**Table 4.10-1. DEH File Summary for Selected Properties
Located within 1/8-mile of the Project Alignment**

Site Address	Site Use	Database Reference	Distance from Project	Project Phases Affected	Contaminants	Extent of Contamination	Status of Site
5400 - 5700 Otay Mesa Road	Road Widening Project	PERMITS, LUST (open)	Within Project Alignment	Phases 2D and 3	Pesticides, Petroleum Hydrocarbons	Soil	Soil samples tested along the project corridor had low levels of pesticides and tested negative for petroleum hydrocarbons.
1/2-mile south of Otay Mesa Road	Former Trash Burn Site	PERMITS	Adjacent to Project	Phases 2A2 and 2B1	Burn Ash	Soil	Majority of burn ash was removed from property and limits of burn ash were not shown as encroaching into Otay Mesa Road.
220 East Sycamore Road	Gasoline Station	LUST (open), UST, PERMITS, RCRA GEN, RCRA NLR	Less than 1/8-mile	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	DEH closed site file. 194 cubic yards of contaminated soil and four groundwater monitoring wells remain on site.
104 West San Ysidro Boulevard	Gasoline Station	LUST (closed)	Adjacent to Project	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	The results of a proposed investigation of the site were not present in the regulatory file.
108 West San Ysidro Boulevard	Gasoline Station	ERNS, LUST (open), UST, PERMITS, RCRA GEN	Within Project Alignment	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Currently undergoing quarterly groundwater monitoring and removal of free product
120 West San Ysidro Boulevard	Gasoline Station	LUST (open), UST, PERMITS	Adjacent to Project	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	7,000 cubic yards of contaminated soil remain on site, groundwater monitoring has been ongoing since 1993. Corrective action plan denied by DEH in 2003.
170 W. San Ysidro Boulevard	Fire Station	LUST (open), UST, PERMITS	Less than 1/8-mile	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Five soil boring and three monitoring wells exist on site. Ongoing soil and groundwater monitoring requested by DEH
121 East San Ysidro Boulevard	Gasoline Station	LUST (open), UST, PERMITS	Adjacent to Project	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Five monitoring wells were installed on the property. Recommendations include additional assessment of groundwater to the south and east and skimming of free product from contaminated wells.
299 East San Ysidro Boulevard	Automobile Service Station	LUST (open)	Adjacent to Project	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Groundwater monitoring wells and soil boring identified contaminated soil and groundwater. The extent of the contamination was estimated to extend approximately 15 feet into East San Ysidro Boulevard. However, a monitoring well located in East San Ysidro Boulevard did not detect contaminated groundwater.
301 East San Ysidro Boulevard	Gasoline Station	LUST (open), UST, PERMITS	Adjacent to Project	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Currently undergoing quarterly groundwater monitoring.

Table 4.10-1 Continued

Site Address	Site Use	Database Reference	Distance from Project	Project Phases Affected	Contaminants	Extent of Contamination	Status of Site
314 East San Ysidro Boulevard	Gasoline Station	LUST (open), UST, PERMITS	Less than 1/8-mile	Phase 2B1	petroleum hydrocarbons	Soil, groundwater	Currently undergoing quarterly groundwater monitoring. A groundwater pump and treatment system installed in 1991 has recovered approximately 1,220 gallons of gasoline and treated 4 million gallons of contaminated groundwater.
1481 Heritage Road	Firing Range	LUST (open), SWL	Adjacent to Project	Phase 2B2	Lead	Soil, groundwater	A workplan for an environmental investigation was prepared in October 1998.
1500 Heritage Road	Engine Test Facility at Brown Field	LUST (closed), UST, PERMITS, RCRA GEN	Adjacent to Project	Phase 2B2	petroleum hydrocarbons	Soil	Approximately 190 cubic yards of soil was removed and disposed of at the Otay Sanitary Landfill as non-hazardous waste. DEH closed the case on July 26, 1998.
1812 Cactus Road	Unauthorized Landfill	SWL, PERMITS	Adjacent to Project	Phases 2B2, 2E and 3	Lead, Copper,	Soil, groundwater	Remediation at the property included selective grading activities and capping impacted areas with asphalt or impermeable cap. Some soil was removed. Impacted soil and groundwater could be present in Cactus Road or other roadways in the general vicinity
La Media Road	Formerly Used for Farming	LUST (open), PERMITS	Less than 1/8-mile	Phase 3	Pesticides, Petroleum Hydrocarbons	Soil	100 cubic yards of soil was removed in conjunction with UST removal. Another 500 cubic yards of pesticide-impacted soil was removed. A human health risk assessment was conducted at the property and yielded acceptable risk thresholds for commercial development.
1424 Continental Street	Airfield	LUST (open), UST, PERMITS	Less than 1/8-mile	Phases 2B2, 2D, 2E, and 3	petroleum hydrocarbons	Soil, groundwater	25 unauthorized release cases have been reported for this property (13 closed, 12 open). The 12 open cases pertain to gasoline released from a former UST field. Contaminated soil and groundwater from the UST field has been found approximately 200 feet below the surface. Contamination may also have spread off site.
1424 Continental Street	Airfield	LUST (closed), UST, PERMITS	Less than 1/8-mile	Phases 2B2, 2D, 2E, and 3	petroleum hydrocarbons	Soil, groundwater	Two of the tanks from the Brown Field UST field were formerly leased by Beardan Aviation. Information pertaining to unauthorized releases from these tanks is included in the regulatory file for Brown Field.

HISTORIC USES IN THE PROJECT AREA

Historic topographic maps and aerial photographs were reviewed to identify historical uses of the project area, which may indicate the presence of hazardous materials. A review of these historical documents indicates that the majority of the proposed alignment has remained similar to its current configuration as paved or unimproved roadways for many years. Otay Mesa Road was widened to four lanes in the early 1990s. The properties located adjacent to the proposed alignment have sustained various land uses including residential, agricultural, commercial and light-industrial.

The preferred site for Pump Station A1, located at the southwest corner of Cactus and Siempre Viva Roads, currently consists of a two-story commercial building operated as a landscaping business, an asphalt-paved parking area, concrete flatwork, landscaping, a gravel-covered parking lot, and several acres of non-native grassland. The parcel adjacent to and west of the preferred pump station site is currently used for vehicle repair and storage. The majority of this property is concrete paved with some areas of exposed soil and gravel in the western portion of the site.

SITE RECONNAISSANCE

A reconnaissance of the subject alignment was performed on November 15, 2003 in order to observe existing conditions and to identify indicators of hazardous materials that could affect the proposed project alignment. A map of the project alignment, including identified hazardous materials sites and conditions, is included as Figure 4.10-1. The following information concerning trash and debris, groundwater monitoring wells, storage tanks, and other conditions of concern is based on observations noted or information obtained during the site reconnaissance.

TRASH AND DEBRIS

Scattered trash and debris, including wood fragments and miscellaneous paper and plastic products, was observed along many of the project area roadways.

GROUNDWATER MONITORING WELLS

Groundwater monitoring wells were observed during site reconnaissance of the project alignment. Four monitoring wells were observed within the Phase 2B2 alignment along Via De San Ysidro, East San Ysidro and West San Ysidro Boulevards and Hill Street. These wells are associated with LUST cases and are located adjacent to the following properties:

- Mobil gasoline station located at 120 West San Ysidro Boulevard;
- Exxon gasoline station located at 108 West San Ysidro Boulevard;
- Sevel Garage located at 299 East San Ysidro Boulevard; and
- ARCO gasoline station located at 301 East San Ysidro Boulevard.

In addition, five monitoring wells were also observed on the properties located adjacent to or nearby the proposed alignment along West San Ysidro Boulevard, East San Ysidro Boulevard, East Sycamore Road, and Continental Street.

STORAGE TANKS

No indicators of underground storage tanks (USTs) or aboveground storage tanks (ASTs) were observed in the project alignment area. A metal pipe was observed in the sidewalk on the northern side of East San Ysidro Boulevard adjacent to Sevel Garage and the on-ramp to northbound Route 805. The pipe did not appear to be

a fill port but might possibly be an indication of a UST. Indicators of USTs (including dispensers) were observed on three gasoline station properties located adjacent to or nearby the proposed alignment along Calle Primera, Heritage Road and Cactus Road. Groundwater monitoring wells were not observed on or adjacent to these properties.

OTHER CONDITIONS OF CONCERN

During the site reconnaissance, a hazardous materials warning sign was observed from Cactus Road at the eastern edge of the Tripp Landfill. This is an unpermitted hazardous waste landfill, which occupies and fills the head of Spring Canyon adjacent to and west of Cactus Road. The wastes contained within the landfill include auto-shredder waste, burn ash and burn-ash contaminated soil. As such, portions of the alignment in this area, which includes Phases 2B2, 2E and 3, may also contain burn ash and auto shredder waste.

Localized areas of hydrocarbon staining were observed in the gravel parking lot area of the preferred Pump Station A1 site. A storage shed and dumpsters containing landscape waste were also observed on the gravel lot. Adjacent to the preferred Pump Station A1 site, several five-gallon buckets of motor oil and used oil were observed in a repair area. Cylinders of compressed gases, scrap metal, automobile parts, and miscellaneous debris were also observed in the repair area, along with areas of hydrocarbon staining.

Stained asphalt and concrete pavement was observed on many public roadways along the proposed alignment. This is a common condition found along roadways.

Fifty-five-gallon drums containing purge water for groundwater monitoring well sampling were observed at the ARCO gasoline station located at 301 East San Ysidro Boulevard. Phase 2B2 of the proposed project would include construction adjacent to this property.

In addition, several ground-mounted and pole-mounted SDG&E transformers were observed along the subject alignment, which may contain polychlorinated biphenyls (PCBs) if manufactured between 1929 and 1977. However, staining of soil or adjacent concrete flatwork was not observed near the transformers, indicating that the transformers are not leaking PCBs.

REGULATORY FRAMEWORK

Applicable federal, state and local laws and regulations governing the generation, handling, transportation, and disposal of hazardous materials are described in the following sections.

FEDERAL

Title 29 CFR, Occupational Safety and Health Act

The federal Occupational Safety and Health Act is intended to ensure that employers provide their workers with a work environment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, or unsanitary conditions. Operation of this program is delegated to the state and operated by Cal/OSHA. These regulations would apply to the operation of the proposed pump stations.

STATE

Hazardous Materials Business or Management Plan

Chapter 6.95 of the California Health and Safety Code requires facilities that use, produce, store, or generate hazardous substances or have a change in business inventory to have a Hazardous Materials Management Plan (HMMP) or Business Plan. The plan must disclose the type, quantity, and storage location of materials. The law also requires a site-specific emergency response plan, employee training, and designation of emergency contact personnel.

The proposed pump stations would include the storage of hazardous substances for use in odor control and emergency power. Therefore, the City would be required to submit an HMMP to the local administering agency, the County DEH, for operation of the pump station. The HMMP would describe hazardous materials storage and handling practices and contain procedures for monitoring storage, performing regular inspections, detecting releases, and testing the detection systems on a regular basis.

Aboveground Petroleum Storage Act

The Aboveground Petroleum Storage Act requires registration and spill prevention programs for ASTs that store petroleum. In some cases, ASTs for petroleum may be subject to groundwater monitoring programs that are implemented by the Regional Water Quality Control Boards and the State Water Resources Control Board. An above-ground storage tank containing diesel fuel for operation of the emergency generators would be located on the Pump Station A1 site. This storage tank would be subject to the Aboveground Petroleum Storage Act.

Title 8 CCR, California Occupational Safety and Health Act

In California, under the California Occupational Safety and Health Act, Cal/OSHA enforces federal OSHA requirements as well as more stringent state regulations. Cal/OSHA hazardous materials regulations include requirements for safety training, availability of safety equipment, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces hazard communication program regulations, which include identifying and labeling hazardous substances, providing employees with Material Safety Data Sheets, and describing employee training programs. These regulations also require the preparation of an emergency action plan, including escape and evacuation procedures. This would apply to the operation of the proposed pump station.

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government, and private agencies. The plan is administered by the Office of Emergency Services and includes response to hazardous materials incidents. The Office of Emergency Services coordinates the response of other agencies, including the Cal/EPA, the California Highway Patrol, the California Department of Fish and Game, the Regional Water Quality Control Board, the San Diego Air Pollution Control District, and the City of San Diego Fire Department.

LOCAL

City of San Diego Local Enforcement Agency

The LEA is responsible for enforcing and implementing state solid waste regulations and that wastes encountered during construction activities are handled and disposed of according to state regulations within the city of San Diego.

The Tripp Salvage Site (AKA Cactus Road disposal site) is identified as a closed landfill on the State's Solid Waste Identification System (SWIS) list as facility # 37-CR-0011. California Code of Regulations, Title 27 (27CCR), § 21190(c), grants the LEA authority for approval over plans for projects within 1,000 feet of a disposal site. The requirement for the Community Health and Safety Plan is derived from 27CCR 21190(a). The LEA requires that these requirements are addressed by the contractor prior to construction of the OMTS in the vicinity of this closed landfill.

County of San Diego Department of Environmental Health Hazardous Materials Division

The Department of Environmental Health Hazardous Materials Division (DEH-HMD) is the Certified Unified Program Agency (CUPA) for the County of San Diego. The DEH-HMD has been authorized by the state to implement and review state programs. DEH is responsible for implementing the following four programs:

- 1) Hazardous Materials Management – DEH-HMD implements all of the Hazardous Materials Business Plan elements: Site map, emergency response plan, employee training, hazardous materials inventory. (DEH-HMD inventory hazardous materials that are onsite at quantities >55 gallons, 500 lbs, 200 cubic feet).
- 2) Hazardous Waste – DEH-HMD inspects all businesses that generate hazardous waste in San Diego. The purpose of the inspections are to verify proper management & disposal of the wastes.
- 3) Medical Waste – DEH-HMD inspects all businesses that generate medical waste for proper management and disposal.
- 4) Underground Storage Tanks – DEH-HMD authorizes the proper installation, removal and operation of all Underground Storage Tanks in the county.

4.10.2 IMPACT SIGNIFICANCE CRITERIA

Based on City and/or CEQA thresholds, hazardous materials impacts would be potentially significant if the project:

- Proposes the handling, storage, and treatment of hazardous materials, such as a Hazardous Waste Facility;
- Would be located on a site that is on or near known contamination sources;
- Proposes dewatering in conjunction with major excavation in an area with high groundwater historically developed with industrial or commercial uses;
- Would be located on a site with existing or previously removed USTs; or

- Would involve a utility pipeline project that traverses through or near one or more known contaminated sites.

4.10.3 ISSUE 1 – HAZARD TO THE PUBLIC OR ENVIRONMENT

Issue 1: Does the proposed project create a significant hazard to the public or environment through construction operations, routine transport, use or disposal of hazardous materials?

IMPACT ANALYSIS

The proposed project would involve the construction of an underground sewer pipeline that would have the potential to traverse through or near several known contamination sites, including those with existing or previously removed USTs. In addition, excavation and construction activities would have the potential to encounter contaminated groundwater in areas where the groundwater table is shallow, which would require the implementation of a dewatering program. These activities would have the potential to result in a significant hazard to the public or the environment. A description of the potential hazard areas located along the proposed project alignment is provided below.

The operation of the pump stations proposed as part of the project would include the handling, storage and use of hazardous materials for odor control and emergency power, which would have the potential to result in a significant hazard to the public or the environment. A description of the potential hazards associated with the operation of the proposed pump stations is provided below.

Project Construction

Some portions of the proposed project alignment are known to contain contaminated soil and groundwater. Excavation and/or dewatering activities occurring along these segments of the project alignment would have the potential to encounter contaminated areas. As identified in the Phase I Environmental Site Assessment (Rincon 2004) prepared for the proposed project, a number of gasoline stations located adjacent to the project alignment in the San Ysidro area have had known unauthorized releases of petroleum hydrocarbon products from on-site USTs resulting in documented soil and groundwater contamination. These gasoline stations are located along Via de San Ysidro, East and West San Ysidro Boulevard and Hill Street in the San Ysidro community. The construction of Phase 2B1 located in this area would have the potential to encounter petroleum hydrocarbon-contaminated soil and groundwater during excavation and trenching activities. If groundwater were encountered during construction activities, a dewatering permit would be obtained and a dewatering program would be implemented. Therefore, a potentially significant hazardous materials impact may occur during the construction of Phase 2B1 in the San Ysidro area.

Phases 2B2, 2E and 3 of the proposed project would involve the construction of sewer pipeline facilities along Cactus Road. The Phase I report prepared for the proposed project (Rincon 2004) identified a former landfill, Tripp Landfill, located along the western side of Cactus Road in the vicinity of the proposed alignment. Hazardous wastes, including burn ash and auto shredder waste, were known to have been deposited in the landfill in the 1970s and 1980s. These materials commonly contain heavy metals and other contaminants. Based on regulatory file reviews, the limits of impacted soil and waste materials extend to the eastern property line of the landfill adjacent to Cactus Road. As such, impacted soil and waste materials may be present in Cactus Road adjacent to the landfill. In addition, concentrations of pollutants have been detected in groundwater located beneath the Tripp Landfill and areas downstream from the property. Due to the proposed depths of trench excavations in this area during Phases 2B2 (10 – 20 feet) and 2E (<10 feet) and the shallow depth to groundwater in this area, the construction of Phases 2B2 and 2E would have the potential to encounter contaminated soils and groundwater originating from the Tripp Landfill. Because Phase 3 is futuristic and not anticipated to be implemented until 2020 or beyond, the depths of excavation for this phase

have not been determined. However, it is probable that depths of excavations during Phase 3 would be similar to Phases 2B2 and 2E. Therefore, a potentially significant hazardous materials impact may occur during the construction of Phases 2B2, 2E and 3 along Cactus Road in the vicinity of Tripp Landfill.

Several known unauthorized releases of petroleum hydrocarbon products from a former UST field at Brown Field Municipal Airport, resulting in contaminated soils and groundwater, have occurred in an area located approximately 750 feet north of Otay Mesa Road and 750 east of Heritage Road. The depth to groundwater beneath Brown Field is approximately 200 feet below existing grades. Portions of the project alignment to be implemented during Phases 2B2, 2D, 2E, and 3 would be located along Otay Mesa Road or Heritage Road in the vicinity of the release sites. Based on the 750-foot distance of the release sites from the proposed project alignment and the proposed excavation depths of 10 to 15 feet for Phases 2B2 (10 – 20 feet), 2D (< 15 – 35), and 2E (<10 feet), it is unlikely that contaminated groundwater would be encountered during construction activities. However, impacted soils due to known unauthorized releases and undocumented releases from the former UST field may be present in portions of the alignment near Brown Field and could be encountered during project construction of Phases 2B2, 2D, 2E, and 3. This represents a potentially significant hazardous materials impact.

The presence of USTs on other adjacent and nearby properties (non-release sites) along Phases 2A2, 2B2, 2D, 2E, and 3 of the proposed alignment is a potential area of concern. Although unauthorized releases at these properties have not been documented at this time, releases from USTs and associated piping and dispensers at these properties may have occurred, resulting in contaminated soil or groundwater. If the contaminated soil and groundwater extends to areas within the project alignment, they could be encountered during excavation and trenching activities associated with project construction. This would result in a significant impact.

Asphalt and concrete pavement located throughout the project alignment were observed to have been stained with unidentified substances. This is a common condition observed on many public roadways and the substances are not likely to have migrated downward to underlying soils or groundwater. Therefore, impacts would be less than significant.

The use of a portion of the preferred site for Pump Station A1 as a vehicle maintenance facility is a potential area of concern, especially since hydrocarbon stained soil and gravel were observed within and adjacent to the preferred site. Soil conditions beneath the gravel layer in the parking lot area were not evaluated for pollutants; however, historical maintenance operations could have contaminated soil in this area. Therefore, contaminated soils and/or groundwater could be encountered during the construction of phases 2E, 2F and 3 of the proposed pump station.

As discussed in Chapter 3.0, Project Description, the pipeline alignments and pump station locations of the proposed Phase 2C facilities cannot be determined until future development plans are approved. Because the locations of the Phase 2C pipelines and pump stations are unknown at this time, this phase of the project was not included in the analysis for the Phase I Environmental Site Assessment (Rincon 2004). Phase 2C is considered to be a subsequent activity of the Program EIR and would require subsequent environmental review, including hazardous materials review, once the locations of the Phase 2C facilities are determined, pursuant to the CEQA Guidelines Section 15168(c)(1). Therefore, for the purposes of this analysis, Phase 2C would have the potential to result in a significant hazard to the public or the environment.

PROJECT OPERATION

Odor Control Chemicals

The proposed project would involve the operation of Pump Station A1 to pump waste water originating in the east mesa area in the force mains along Cactus Road. The pump station would include a chemical storage for odor control. Chemicals used for flows between 4 MGD and 12 MGD would include activated carbon and bioxide. Passive air exchanges via activated carbon canisters would be used to control odors in the wet well and bioxide would be added to the flow stream to control odors in the pipe. Carbon canisters would be five feet in width by four feet in height and hold 1,801 pounds of carbon. Assuming an average rate of flow, the carbon has a lifetime of approximately 271 days, requiring approximately 1.3 changes per year. The storage tank for bioxide would have a capacity of approximately 3,500 gallons and be located in the chemical storage room.

At approximately 12 MGD, the use of activated carbon and bioxide would be discontinued and odor control would then be maintained through the use of sodium hypochlorite (NaOCl) and sodium hydroxide (NaOH). These two chemicals would be added to the wet well to control odors in the force main. NaOCl would also be added to the flow stream to control odors. The storage tanks for NaOCl and NaOH would be stored in the chemical storage room and would each have a capacity of approximately 8,500 gallons.

Odor control chemicals would be handled in compliance with applicable federal, state and local regulations for the handling, storage and use of hazardous materials. Therefore, no significant impact would occur from the storage and use of hazardous chemicals for odor control at Pump Station A1.

Emergency Fuel Storage

One or more 500-gallon above-ground diesel storage tanks would also be located on site at Pump Station A1 to provide fuel for the emergency standby generator. The storage tank(s) would have the appropriate fuel capacity to operate the standby generator for at least 24 hours in the event of a power failure at the pump station. The tank would be aboveground and constructed with a double-walled spill containment vessel with leak detection monitoring devices.

The standby generator(s) would be tested once every week or two weeks for a period of 10 to 15 minutes, consistent with the National Fire Protection Agency's Standards for Emergency and Standby Power Systems (2002), which requires a minimum of one half hour of testing once a month. Fuel would also need to be recycled once per year through a process called "fuel polishing." This includes running the fuel through a filter to remove excess algae and then recirculating the same fuel back into the tank. In addition to the fuel polishing, fuel stabilizer would be added to the fuel to slow the algae growth process.

All above-ground storage tanks would comply with federal, state and local standards for the storage of petroleum hydrocarbons, including registration with the County of San Diego DEH. Therefore, no significant impact would occur from the handling, storage and use of diesel fuel for emergency power at Pump Station A1.

SIGNIFICANCE OF IMPACT

Construction of the proposed project would have the potential to result in significant hazardous materials impacts during the implementation of Phases 2A2, 2B1, 2B2, 2D, 2E, 2F, and 3 due to known or unknown contaminated soils and groundwater which may exist along the proposed project alignment. Construction of Phase 2C would also have the potential to result in a significant hazard to the public or the environment. The

operation of the proposed project would not result in a significant impact associated with hazardous materials storage or use.

MITIGATION, MONITORING, AND REPORTING

Implementation of the following mitigation measures would reduce potential impacts associated with hazardous materials to below a level of significance.

Hazardous Materials – 1: Prior to the City's first pre-construction meeting, the applicant shall provide a letter of verification to the Assistant Deputy Director (ADD) of Land Development Review (LDR), the City's Local Enforcement Agency (LEA), and the Environmental Services Department (ESD), stating that a qualified hazardous materials monitor has been retained to implement the soil monitoring program during project excavation and trenching. The monitoring program shall be implemented during the following project construction phases: Phase 2B1 along Via De San Ysidro, East and West San Ysidro Boulevards, Hill Street; Phase 2B2 along Heritage Road; and Phases 2B2, 2E and 3 along Otay Mesa Road in the vicinity of Brown Field and along Cactus Road in the vicinity of the former Tripp Landfill. In addition, if soil sampling of the proposed Pump Station A1 site indicates that contaminated soils are located at this site, then the monitoring program shall also be implemented during excavation of the contaminated areas of the Pump Station A1 site. During these project phases, the monitoring program shall be conducted for the presence of petroleum hydrocarbon contamination, burn ash, debris-laden fill material, and discolored or odorous soil in the upper 10 feet of the soil column in all phases except Phase 2B1. Monitoring shall occur for all excavation depths during Phase 2B1. If such soil is encountered, it should be evaluated by a qualified professional and handled in accordance with applicable environmental laws and regulations.

Hazardous Materials – 2: Prior to the City's first pre-construction meeting, the applicant shall prepare a Community Health and Safety Plan for approval by the City's Local Enforcement Agency (LEA) for Phases 2B2, 2E and 3 along Cactus Road in the vicinity of Tripp Landfill.

Hazardous Materials – 3: Prior to the City's first pre-construction meeting, construction plans shall be reviewed by City LEA and ESD staff for dewatering plans and operations. If dewatering plans and operations are proposed, environmental monitoring for the presence of free product and impacted groundwater shall be conducted as a part of dewatering plans and operations.

Hazardous Materials – 4: During excavation and construction activities for all phases of the proposed project, any undocumented underground storage tanks (USTs) or other subsurface features indicative of potential contamination that are encountered along the project alignment shall be evaluated and handled in accordance with all applicable federal and state environmental laws and regulations. Specifically, the County Department of Environmental Health and the City LEA and ESD shall be notified if any USTs are discovered within the excavated areas of the proposed project alignment.

Hazardous Materials – 5: Prior to the City's first pre-construction meeting, construction plans shall be reviewed by City LEA and ESD staff for the destruction of existing groundwater monitoring wells located within the proposed project alignment. If the project would require the destruction of existing groundwater monitoring wells, permission to destroy such wells shall be obtained by the appropriate responsible parties and regulatory agencies.

Hazardous Materials – 6: Prior to the City's first pre-construction meeting, the applicant shall provide proof of all necessary licenses and certifications to perform the excavation and other construction operations to the ADD of LDR. The project builder shall also ensure through employee training that all contractors and workers are made aware of the potential presence of petroleum hydrocarbons and other contaminants in the

proposed project alignment. Health and safety measures shall be taken to minimize the risk of human exposure to contaminants during excavation and construction activities.

Hazardous Materials – 7: Prior to the City's first pre-construction meeting or the issuance of a site development permit for the construction of Pump Station A1, whichever is applicable, soil sampling shall be conducted at the Pump Station A1 site by a qualified professional in order to determine if hydrocarbon-impacted soil is present on the site. If no contaminated soil is found onsite, no further action shall be required. If contaminated soils are found onsite, mitigation measure **Hazardous Materials – 1** shall be implemented during all excavation of identified areas of contamination within the proposed Pump Station A1 site.

Hazardous Materials – 8: When pipeline alignments and pump station location(s) have been determined for Phase 2C, a comprehensive Phase I site assessment shall be conducted by a qualified hazardous materials specialist in order to determine if Phase 2C would have the potential to result in significant hazardous materials impacts due to known or unknown contaminated soils and groundwater which may exist along the proposed project alignment. For potentially significant impacts, the Phase I site assessment shall include recommendations for the remediation of impacts to a level below significant, which may be similar to mitigation measures **Hazardous Materials – 1** through 7, listed above. Mitigation measures implemented to reduce potentially significant impacts shall be approved by the City LEA and ESD and the ADD of LDR.

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4.11 VISUAL QUALITY/AESTHETICS

This section describes the visual setting of the project area and evaluates the potential for changes in visual character with implementation of the project. This analysis provides information on the character of the existing visual landscape, the locations and types of public views within the project area, and the potential visibility of the project from these public viewing locations.

4.11.1 EXISTING CONDITIONS

VISUAL CHARACTER OF THE PROJECT AREA

The OMTS project would be located in the southernmost portion of the City of San Diego. The project area encompasses portions of the Otay Mesa and San Ysidro communities. The trunk sewer would begin to the north of Brown Airfield and would extend in south and westerly directions throughout Otay Mesa to the San Ysidro area east of I-5.

OTAY MESA COMMUNITY

The Otay Mesa area generally consists of relatively flat mesa areas surrounded by large canyon systems. The mesa consists of large expanses of undeveloped land supporting sensitive habitats including non-native grassland, Diegan coastal sage scrub, and vernal pools. Some of these natural areas have been disturbed by off-road vehicle use, primarily by the United States Border Patrol in its pursuit of undocumented immigrants illegally crossing the International border. Development on the mesa includes low-density residential, commercial, industrial, and agricultural uses and roadways. Most roadways along the project alignment are paved, with the exception of portions of La Media and Siempre Viva Roads. Development along the proposed project alignment is generally characterized by one or two-story buildings such as warehouses and single-family residences, and also includes outdoor storage facilities, agricultural areas and business centers. Electrical utilities are located above ground in some areas along the alignment. Landscaping and trees are scarce and vary depending upon the type of development. An exception to this is at the existing Pump Station 23T site, located at the southwest corner of Cactus and Siempre Viva Roads, which is blocked from view by many tall bushes and trees.

Two major canyon systems are located adjacent to the project area. Dennery Canyon is located to the north of Otay Mesa Road and drains to the Otay River. Spring Canyon is located to the south of Otay Mesa Road and drains to the Tijuana River. Steep slopes and wide deep gullies containing sensitive habitats characterize the canyon areas. Dennery and Spring Canyons are designated MHPA, as defined in the City MSCP. The MSCP Subarea Plan (City of San Diego 1997) identifies one wildlife corridor connecting Dennery and Spring Canyons. This corridor crosses under Otay Mesa Road in a culvert located between the intersections of Otay Mesa Road/Old Otay Mesa Road and Otay Mesa Road/Heritage Road.

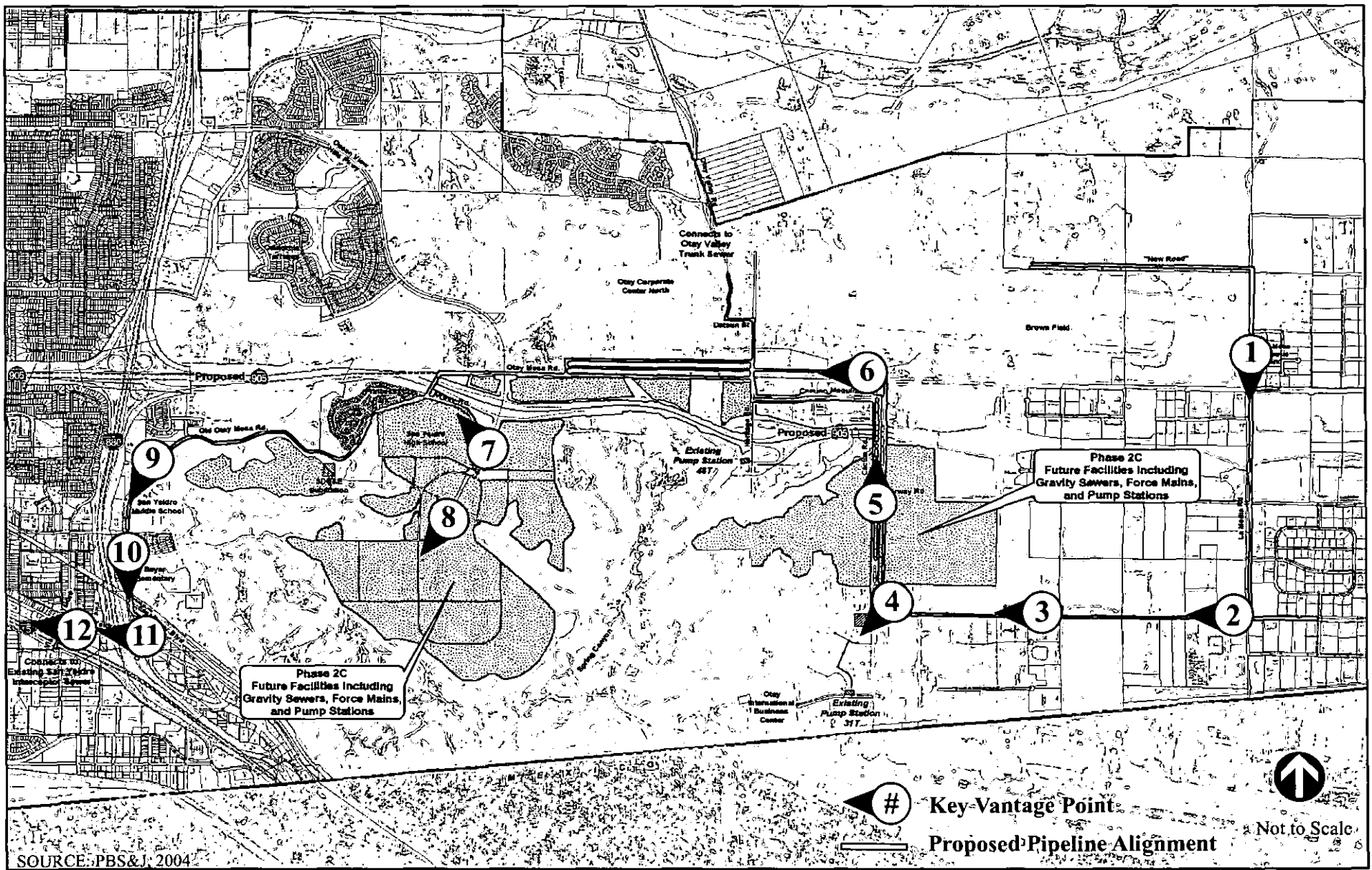
SAN YSIDRO COMMUNITY

The western portion of the proposed project is located in the San Ysidro community, which is fully developed and contains little open space. Development includes medium-density residential and commercial land uses. The San Ysidro crossing of the U.S./Mexico international border is located at the southern boundary of the community. Much of the commercial land uses in the area pertain to the nearby border crossing. Heavy traffic and major freeways characterize the area.

KEY VANTAGE POINTS

Visual sensitivity can be described as viewer awareness of visual changes in the environment and is based on viewers' activities in public areas near a particular site or area. Overall, higher degrees of visual sensitivity are associated with residential areas, outdoor recreational activities, and scenic driving. Areas with industrial or commercial uses are considered to have low to moderate visual sensitivity, as activities conducted in these areas are not significantly affected by the quality of the environment. Sensitivity is based on the overall visual character and visibility of the existing project site. To define the visual quality of the project area, important views and typical views along the project alignment have been identified as key vantage points (KVPs). These KVPs are mostly views from public roads looking at different areas along the project alignment. Twelve vantage points have been identified to represent the visual environment along the project alignment as shown in Figure 4.11-1. Each KVP has been assigned a number, which is identified in the discussion below and shown in Figures 4.11-2 through 4.11-7.

- KVP 1: KVP 1 provides a view looking south along the unpaved portion of La Media Road toward the intersection of La Media and Otay Mesa Roads. Brown Field is located along the right (west) side of the roadway, delineated by a wall and short palm trees. A storage facility containing storage containers, lighting and a fence are located along the left (east) side of the roadway (Figure 4.11-2).
- KVP 2: KVP 2 is a view looking west from the intersection of La Media and Siempre Viva Roads toward an unpaved section of Siempre Viva Road. Open space and agriculture are located to the right and left (north and south, respectively) of the roadway (Figure 4.11-2).
- KVP 3: The KVP 3 view is looking west along a paved portion of Siempre Viva Road near the intersection of Britannia Boulevard and Siempre Viva Road. A graded construction site is located along the right (north) side and commercial uses are located along the left (south) side of the roadway (Figure 4.11-3).
- KVP 4: KVP 4 provides a view of existing Pump Station 23T at the intersection of Siempre Viva Road and Cactus Road. Trees and vegetation surround the pump station (Figure 4.11-3).
- KVP 5: KVP 5 is a view looking north along Cactus Road to the north of the intersection with Siempre Viva Road. Open space is located along the right (east) side of the roadway and residential homes are located along the left (west) side of the roadway (Figure 4.11-4).
- KVP 6: KVP 6 is a view looking west along Otay Mesa Road from the intersection of Cactus Road and Otay Mesa Road. Industrial and commercial uses are located on both sides (north and south) of Otay Mesa Road (Figure 4.11-4).
- KVP 7: KVP 7 is a view looking northwest along Airway Road from the intersection of Caliente and Airway Roads. San Ysidro High School is located on the left (south) side of Airway Road. Open space is located to the right (north) side of Airway Road (Figure 4.11-5).
- KVP 8: The KVP 8 view is looking south toward undeveloped land on the west mesa, at a location to the south of Caliente Road. This land includes native vegetation that has been disturbed by off-road vehicles and grading (Figure 4.11-5).
- KVP 9: The KVP 9 view is looking southwest along Old Otay Mesa Road near the San Ysidro Middle School, which is located on the left (south). On the right is the San Ysidro School District Educational Service Center. The City of Tijuana, characterized by heavy development and urbanization, is located in the background (Figure 4.11-6).

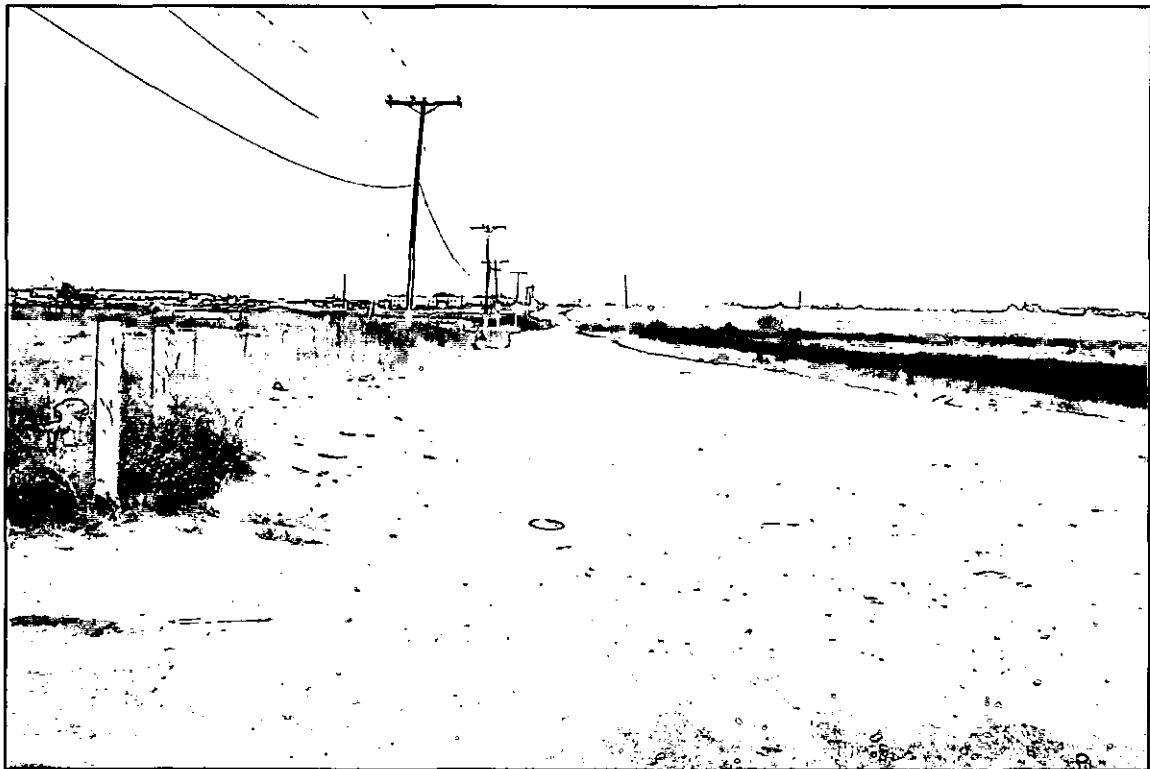


KEY VANTAGE POINT MAP

FIGURE 4.11-1



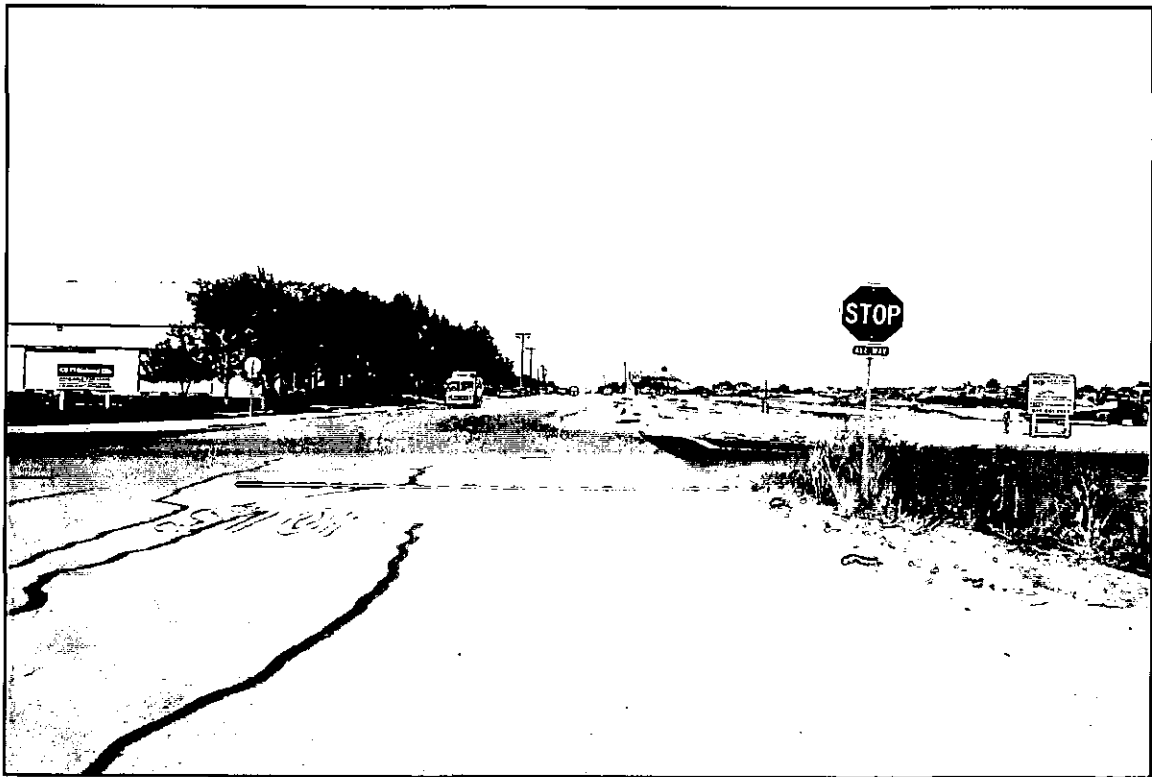
KVP 1- View looking south along La Media Road east of Brown Field.



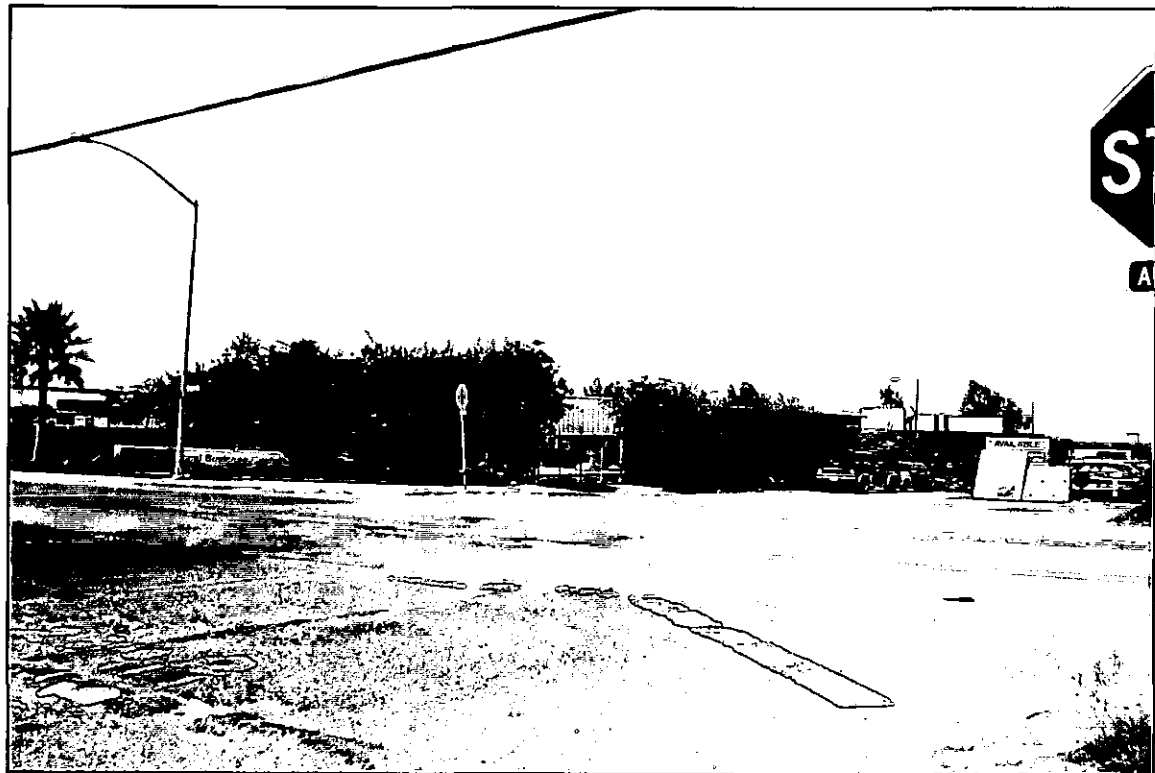
KVP 2- View looking west from the intersection of La Media Road and Siempre Viva Road.

SOURCE: PBS&J, 2004

February 10, 2004



KVP 3- View looking west from the intersection of
Siempre Viva Road and Britannia Boulevard.



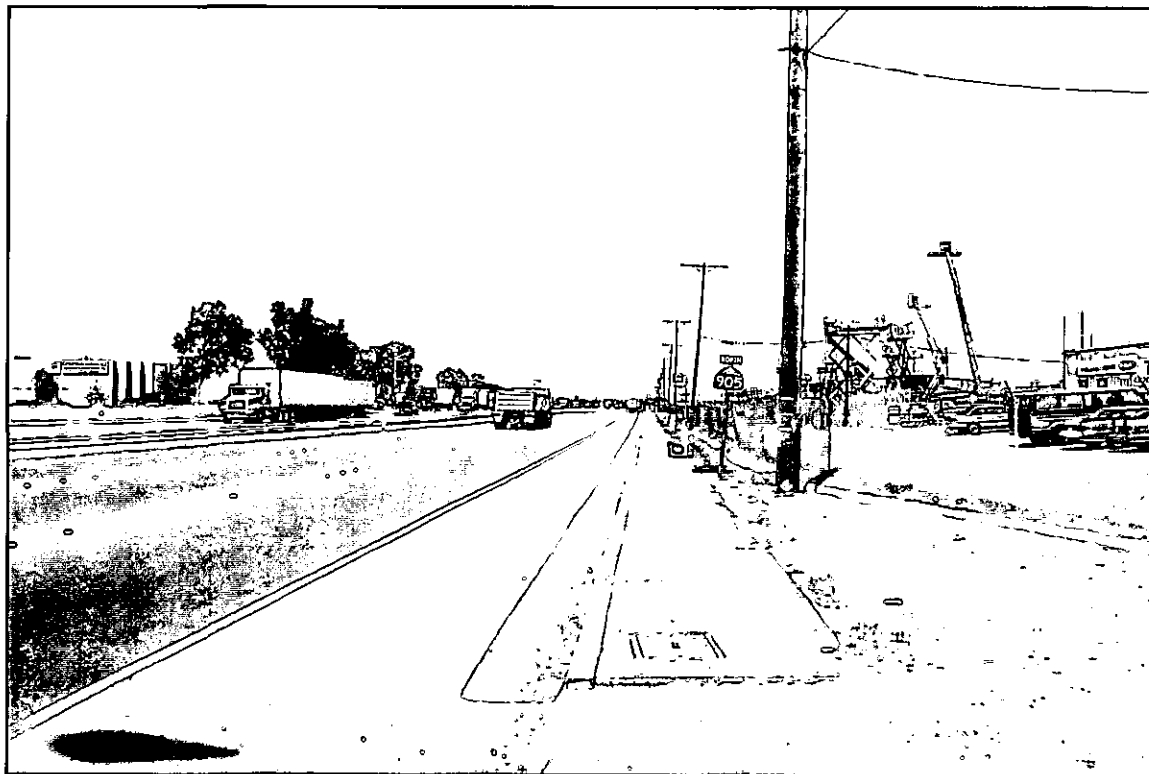
KVP 4- View looking southwest at pump station 23T from the
intersection of Siempre Viva Road and Cactus Road.

SOURCE: PBS&J, 2004

February 10, 2004



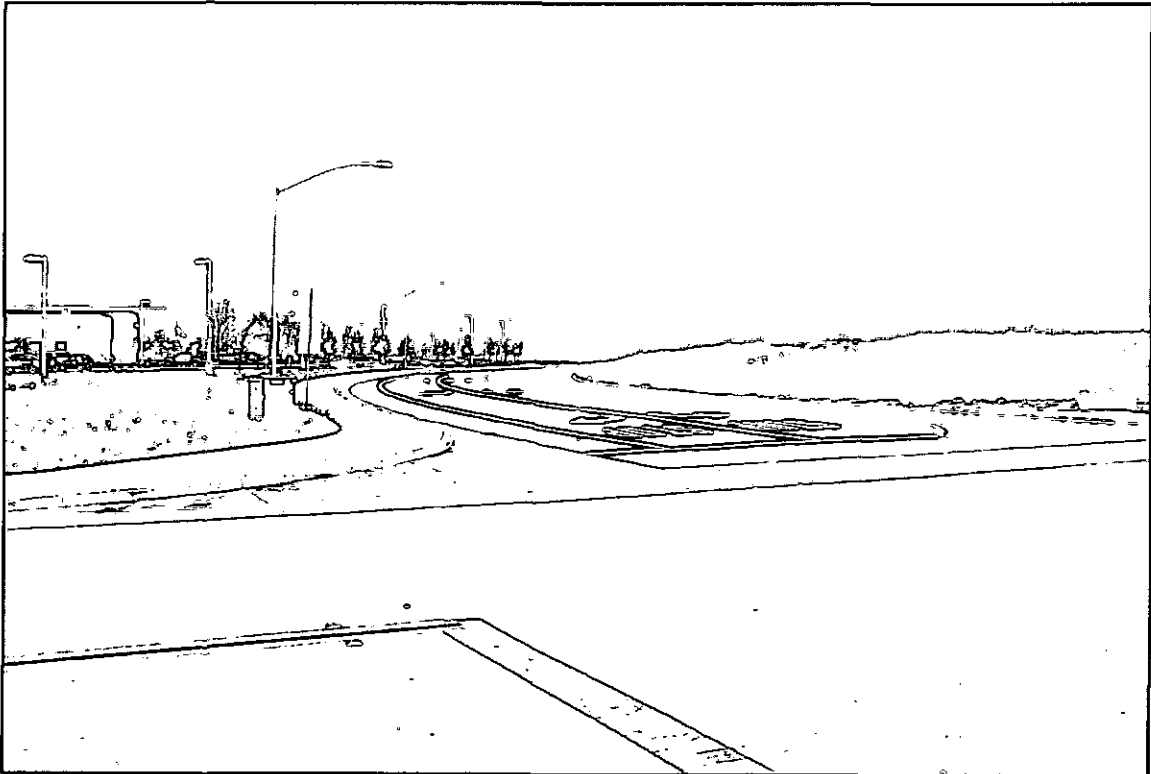
KVP 5- View looking north along Cactus Road to the north of Siempre Viva Road.



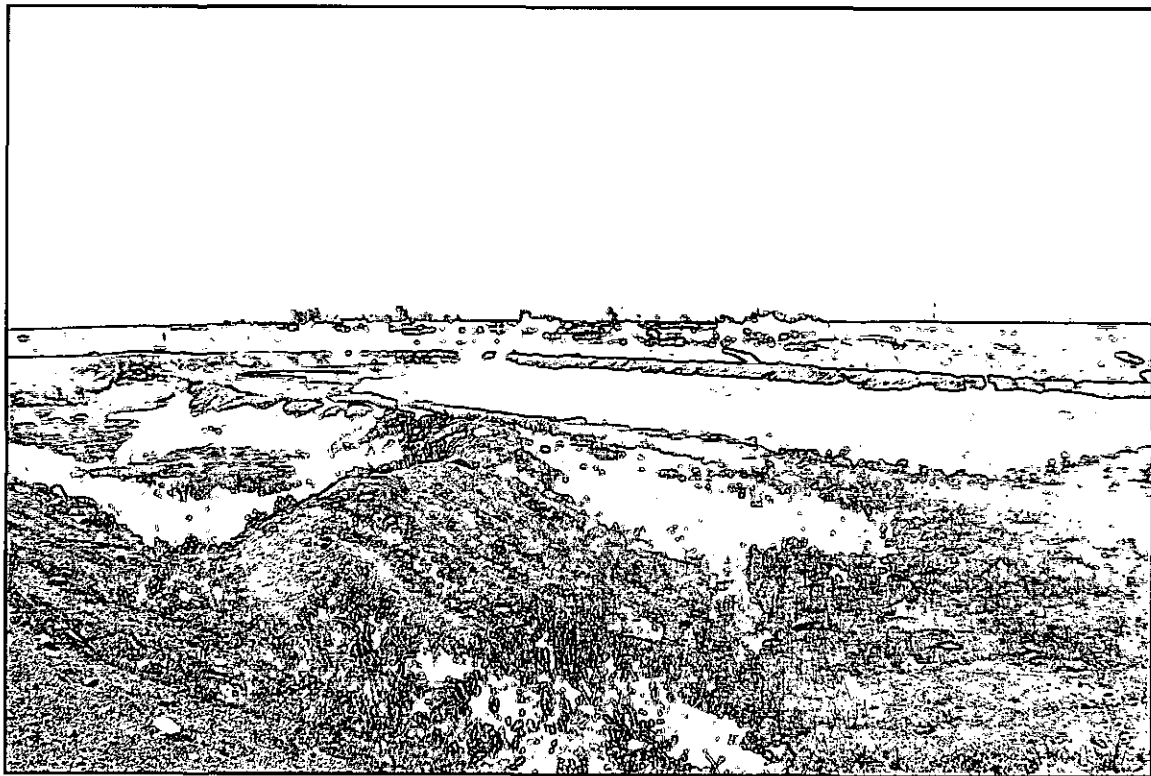
KVP 6- View looking west along Otay Mesa Road from the intersection of Cactus Road and Otay Mesa Road.

SOURCE: PBS&J, 2004

February 10, 2004



KVP 7- View looking northwest from the intersection of Caliente Road and Airway Road.



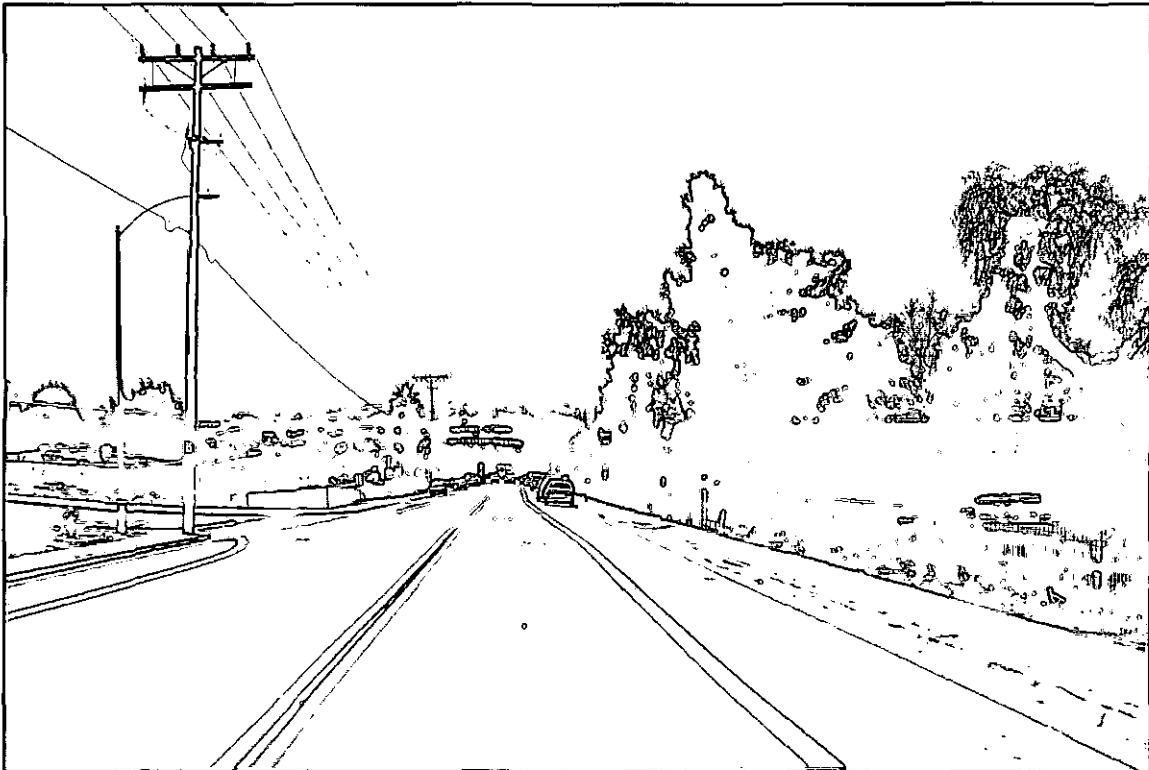
KVP 8- View looking south at the undeveloped mesa area to the south of Caliente Road.

SOURCE: PBS&J, 2004

February 10, 2004



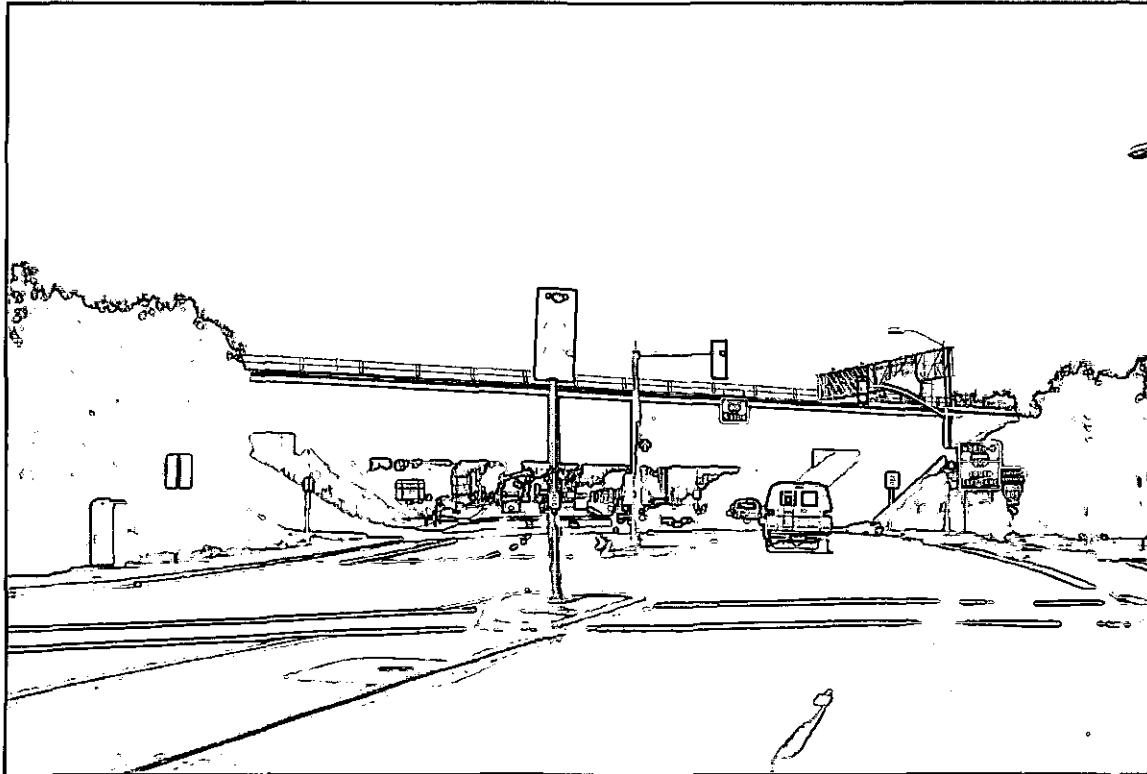
KVP 9- View looking southwest along Old Otay Mesa Road near San Ysidro Middle School.



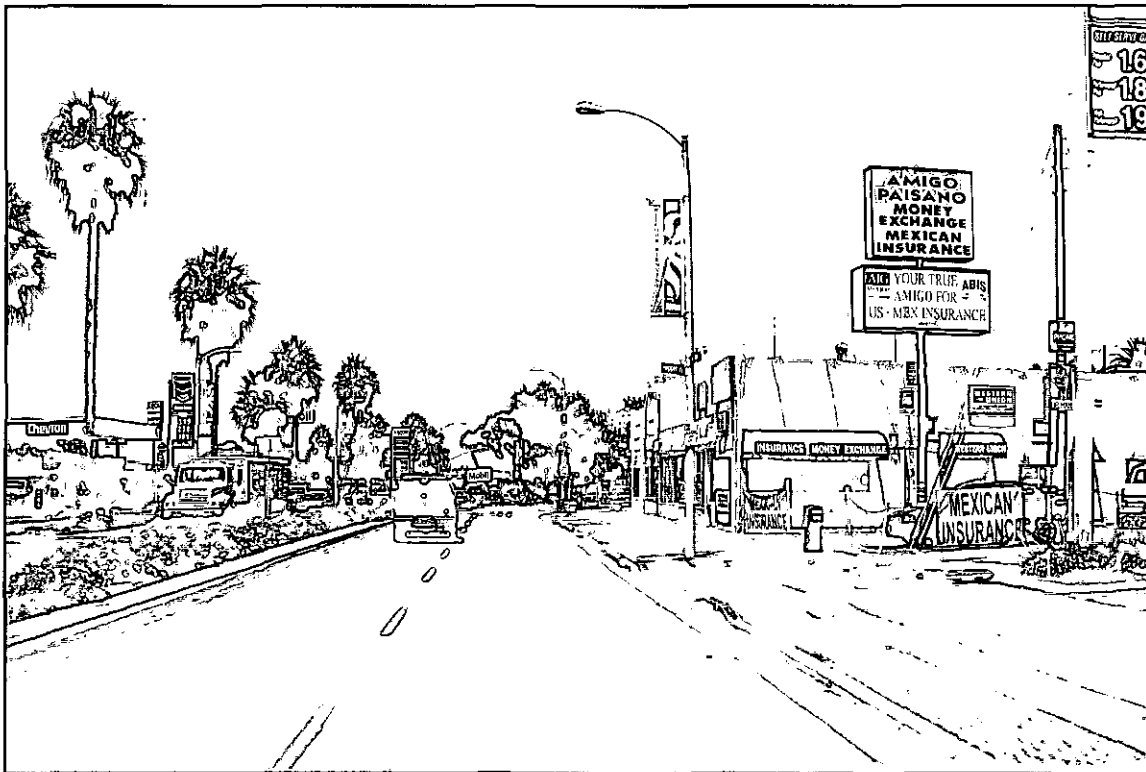
KVP 10- View looking south along East Beyer Boulevard near Beyer Elementary School.

SOURCE: PBS&J, 2004

February 10, 2004



KVP 11- View looking northwest along East San Ysidro Boulevard toward Interstate 805 overpass.



KVP 12- View looking northwest along West San Ysidro Boulevard near Pepper Drive.

SOURCE: PBS&J, 2004

February 10, 2004

- KVP 10: KVP 10 is a view looking south along East Beyer Boulevard to of the intersection with Beyer Boulevard. Beyer Elementary School is located to the left (east) and residential development, trees and open space located to the right (west). The City of Tijuana is located in the background (Figure 4.11-6).
- KVP 11: The view from KVP 11 is looking northwest along East San Ysidro Boulevard at the I-805 overpass. This area is characterized by heavy traffic due to its proximity to the U.S./Mexico international border (Figure 4.11-7).
- KVP12: KVP 12 is a view looking northwest along West San Ysidro Boulevard near Pepper Drive. Development in this area is characterized by commercial uses, such as Mexican insurance businesses and gas stations (Figure 4.11-7).

RELEVANT PLANS AND POLICIES

The following regional and local plans provide visual resources and aesthetics guidelines for development with in the proposed project area.

CITY OF SAN DIEGO PROGRESS GUIDE AND GENERAL PLAN (GENERAL PLAN)

The City's Progress Guide and General Plan (City 1989) is comprised of various elements including Open Space, Recreation and Urban Design which contain goals, recommendations, guidelines, and standards for the management of visual resources. However, none of these elements, or their respective goals, recommendations, guidelines or standards includes visual policies that would apply to the proposed OMTS project.

MULTIPLE SPECIES CONSERVATION PROGRAM LAND USE ADJACENCY GUIDELINES

The proposed project would be located adjacent to designated MHPA as identified in the City of San Diego MSCP Subarea Plan (1997) and would be subject to the MSCP Land Use Adjacency Guidelines identified in this plan. The adjacency guidelines include requirements for lighting adjacent to the MHPA, which is considered to be a visual policy. The lighting guideline is provided as follows:

Lighting of all developed areas adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

This guideline, along with the other MSCP Land Use Adjacency Guidelines, is addressed in Section 4.1, Land Use. No other guidelines provided in the adjacency guidelines apply to visual resources.

SAN YSIDRO COMMUNITY PLAN

The San Ysidro Community Plan (City of San Diego 1995) is the land use planning document for the community of San Ysidro. The Urban Form Element of the community plan identifies goals, objectives and recommendations for creating a unified community, including design guidelines for various types of land uses. Because the proposed project would be located underground and within existing roadways in the San Ysidro community, no visual policies identified in this community plan are applicable to the proposed project.

OTAY MESA COMMUNITY PLAN

The Otay Mesa Community Plan and Environmental Impact Report, adopted in 1981, is the land use planning document for the community of Otay Mesa. The community plan contains four elements, including Land Use, Public Facilities, Social Environment, and Transportation. The Land Use Element contains a Community Environmental and Design Element that provides guidelines and design standards for the development in the Otay Mesa community. The majority of visual policies contained in this element apply to development that includes intensive grading operations, is located on hillsides, or includes street development. The visual policies do not apply to the proposed project, which involves the construction of sewer pipelines and pump stations. Therefore, the visual policies identified in this community plan are not applicable to the proposed project and the project is not inconsistent with the community plan.

4.11.2 IMPACT SIGNIFICANCE CRITERIA

The criteria below for visual impact significance was obtained from the document titled *City of San Diego Planning Department, Environmental Analysis Section, Significance Determination Guidelines, under the California Environmental Quality Act*, dated January 1991 (revised and current, January 1994). Impacts would be considered significant:

1. If the project would block public views from designated open space, roads or parks to significant visual landmarks or scenic vistas;
2. If the project would significantly alter the natural or naturalized landform; or
3. If the project would create manufactured slopes higher than ten feet or steeper than 2:1 (50 percent).

4.11.3 ISSUE 1 – VIEW OBSTRUCTION

Issue 1: Would the proposed project result in the obstruction of any vista or scenic view from a public viewing area?

IMPACT ANALYSIS

Community Plans

No vistas or scenic viewing areas are identified in the Otay Mesa Community Plan and Environmental Impact Report (City 1981). The San Ysidro Community Plan (City 1995) also does not identify any vistas or scenic viewing areas in the community of San Ysidro. Further, the majority of the proposed project would involve the implementation of sewer pipeline under existing roadways. Above-ground structures would be limited to existing and proposed pump stations. Therefore, the proposed project would not obstruct any vista or scenic view from a public viewing area.

KVPs

With the exception of KVPs 9 and 10, no vistas or scenic views were identified from site reconnaissance along the proposed project alignment. KVP 9 is looking southwest along Old Otay Mesa Road near San Ysidro Middle School (see Figure 4.11-6). KVP 10 is looking south along East Beyer Boulevard near Beyer Elementary School (see Figure 4.11-6). Both KVPs provide scenic views of the City of Tijuana due to the elevation and direction of the roadways above the development in the distance. The proposed project would include the implementation of sewer pipeline in trenches located under the roadways at KVPs 9 and 10. However, no permanent above-ground facilities are proposed that would obstruct views from these KVPs.

Any stockpiles soils, construction materials, or equipment that may be located in the roadway during construction would be temporary. Upon completion of this segment of the pipeline alignment, the equipment and materials would be removed, Old Otay Mesa Road and East Beyer Boulevard would be re-paved, and pre-project views from KVPs 9 and 10 would be restored. Therefore, impacts to scenic views from KVPs 9 and 10 would be below a level of significance.

SIGNIFICANCE OF IMPACT

The construction of the proposed project would not result in the obstruction of any vista or scenic view from a public viewing area. Impacts would be below a level of significance.

MITIGATION, MONITORING AND REPORTING PROGRAM

No mitigation would be required because no significant impacts to vistas or scenic views were identified.

4.11.4 ISSUE 2 – CREATION OF A NEGATIVE AESTHETIC SITE

Issue 2: Would the proposed project result in the creation of a negative aesthetic site or project?

IMPACT ANALYSIS

Sewer Pipelines

Project construction of the underground sewer pipelines would have the potential to create a negative aesthetic site along the project alignment from the placement of construction equipment and materials, including stockpiled soils, at construction staging areas and along the project alignment. However, any visual impacts occurring during project construction would be temporary in nature. Upon completion of each phase of construction, the equipment and materials would be removed, any affected roadway(s) would be re-paved, and pre-project views would be restored. Therefore, the construction of sewer pipelines as a part of the proposed project would not result in the creation of a negative aesthetic site.

Pump Stations

The expansion of Pump Station 23T in Phase 2B2 would not create a negative aesthetic site. The expansion would include the addition of pumps, piping and electrical switchgear to increase the capacity of the pump station from 2 MGD to 4 MGD. A small above-ground structure to house electrical panels would also be constructed, however, this approximately 100-square foot building with a maximum height of approximately 10 feet would not create a negative aesthetic site in this industrial and agricultural area. In addition, the building would be partially blocked from the view of Cactus and Siempre Viva Roads due to the fence and landscaping that currently surrounds the pump station. The expansion would not increase the existing footprint of the pump station site. Therefore, the expansion of Pump Station 23T would not result in the creation of a negative aesthetic site.

The construction of proposed Pump Station A1 would have the potential to result in the creation of a negative aesthetic site. The pump station would include the construction of above-ground structures on a partially developed site containing an outdoor storage facility, landscaping business, concrete and gravel parking areas, and undeveloped non-native grassland. The pump station would be constructed in Phase 2E with an initial capacity of 8 MGD, and then expanded to 12 MGD in Phase 2F. During Phase 3, the pump station could be expanded in phases to a maximum capacity of 35 MGD. However, visual impacts would be minimized by expanding the above-ground structures associated with the pump station during each proposed pump station upgrade. This would allow for facilities to be constructed only when demand dictates their need, and would

ensure that facilities are not built prematurely or unnecessarily. In addition, the pump station would be constructed in an area of existing industrial development and would not be out of character with other nearby development types. The Pump Station A1 building would be constructed with tilt-up concrete and open wood-framed gable roof with concrete tiles. The building's architectural style and materials would be designed to blend with the surrounding industrial and commercial uses of the area. Therefore, the construction of Pump Station A1 would not create a negative aesthetic site.

Additional pump stations may be constructed as part of Phase 2C, which could result in a negative aesthetic site.

SIGNIFICANCE OF IMPACT

Pump stations constructed as part of Phase 2C would have the potential to result in the creation of a negative aesthetic site or project. Impacts would be potentially significant.

MITIGATION, MONITORING AND REPORTING PROGRAM

Implementation of the following mitigation measure would reduce potential significant negative aesthetic impacts associated with Phase 2C pump stations to below a level below significance.

Visual Quality/Aesthetics – 1: For any pump station(s) constructed as part of Phase 2C, the architectural style and materials used in the pump station building(s) shall be designed to blend with the surrounding land uses of the area in order to avoid creating a negative aesthetic site.

4.11.5 ISSUE 3 – SUBSTANTIAL CHANGE TO NATURAL TOPOGRAPHY OR GROUND SURFACE

Issue 3: Would the proposed project result in a substantial change to natural topography or ground surface relief features?

IMPACT ANALYSIS

Sewer Pipelines

Construction of the proposed project would include excavation and surface disturbances associated with trenching activities for the implementation of approximately 13 miles of sewer pipeline. While the trenching for the project would be extensive, it would occur beneath the asphalt of existing roadways. The sewer pipelines would be installed in the trenches and the trenches would then be backfilled with native or engineered soils. The temporary disturbance to the topography would be restored upon completion of construction activities. The roadways would be repaved and the pre-project topography would be restored. In addition, any remaining stockpiled soils would be hauled to an authorized site for disposal. Therefore, the implementation of the sewer pipeline as a part of the proposed project would not result in a substantial change to the existing natural topography or ground surface relief features of the project site.

Pump Stations

The expansion of Pump Station 23T in Phase 2B2 would not involve the expansion of the boundaries of the existing pump station site. Therefore, no substantial change to natural topography or ground surface relief features would occur from the expansion of Pump Station 23T.

The construction of Pump Station A1 would be located on a site that has been previously cleared and rough graded. This is indicated by the relatively flat surface of the site and its colonization by non-native grassland. As the site does not contain uneven topography, it would not require the creation of manufactured slopes or extensive cut and fill operations. Excavation would be required and surface disturbances would occur from construction the first floor of the pump station, which would be located approximately 40 feet below-grade. The pump station would also include a concrete driveway and parking areas, which may require minor additional grading. However, no substantial changes to the natural topography or ground surface relief features would occur.

Any pump stations constructed as part of Phase 2C would be located on the mesa top south of Airway Road. The pump station(s) would require excavation for construction of the underground wet well, but would not require a massive grading effort that would substantially change the ground surface. Therefore, it is unlikely that construction of a pump station as part of Phase 2C would result in a significant substantial change to the natural topography.

SIGNIFICANCE OF IMPACT

The construction of the proposed project would not result in substantial changes to the natural topography or ground surface relief features. Impacts would be below a level of significance.

MITIGATION, MONITORING AND REPORTING

No mitigation would be required because no significant impacts to topography or ground surface relief features were identified.

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4.12 ENERGY

4.12.1 EXISTING CONDITIONS

This section includes the evaluation of nonrenewable energy sources (i.e., oil and natural gas) associated with the project and project energy requirements. The intent of this section is to determine whether the proposed project is designed to use nonrenewable energy in a wasteful manner.

The project alignment is located throughout a fully urbanized area of the City that is currently occupied by residential areas, schools, commercial/industrial areas and business parks, and Brown Field. The existing backbone utility infrastructure is in place, and consists of a combination of overhead/underground electrical lines and underground natural gas lines.

4.12.2 IMPACT SIGNIFICANCE CRITERIA

For the purposes of this EIR, impacts related to energy would be significant if the project would:

Use nonrenewable energy in a wasteful manner or require additional transmission or distribution lines to be installed and/or electrical substations upgraded.

4.12.3 ISSUE 1 – EXCESSIVE USE OF FUEL OR ENERGY

Issue 1: Would the proposed project result in the use of excessive amounts of fuel or energy?

IMPACT ANALYSIS

The following analysis addresses project-related energy consumption from construction and operation of the proposed project.

Construction

Construction of the proposed project requires the temporary use of non-renewable resources such as gravel, iron ore, diesel fuel, oil and energy resources, which would incrementally contribute to the further depletion of these energy resources. Given the relatively small depletion of energy resources used during construction and the short-term impact of construction, project-related construction activities would not result in the use of substantial amounts of fuel or energy, nor would they result in a substantial increase in demands upon existing sources of energy, or require the development of new energy sources.

Operation

The greatest project-related impact on energy consumption would be associated with the upgrade and ultimate replacement of temporary Pump Station 23T with Pump Station A1. The pump station site is located within a fully urbanized area with existing electrical and natural gas distribution infrastructure in place that is currently serving Pump Station 23T and the surrounding businesses. Project-related energy needs would be supplied by a combination of local and regional providers, which is conveyed through existing San Diego Gas & Electric Company (SDG&E) infrastructure that is already in place.

Pump Station 23T includes two 100-horse power (hp) pumps. Only one of the pumps is in current operation, the second pumps is an emergency back up pump incase of a pump failure. The 100 hp pump currently uses approximately 74.6 kW-hour. Pump Station 23T would be upgraded in Phase 2B2 to accommodate the anticipated increased flows from the future growth of the east Otay Mesa area. The upgrade would include

two new 125 hp pumps in addition to the two existing 100 hp pumps. One of the 125 hp pumps would be used for back up while the other 125 hp and the two existing 100 hp pumps would be in operation. After the expansion, Pump Station 23T would operate three pumps combining for 325 hp and requiring approximately 242 kW-hour.

Construction of the Pump Station A1 would occur in Phase 2E. Pump Station A1 would be constructed to initially convey 8 MGD, with space allocated for additional pumps, piping and electrical switchgear to expand the pump station in later phases of the proposed project. The two original 100 hp pumps from Pump Station 23T would be removed and replaced by two new 250 hp pumps. Phase 2E would include two 250 hp pumps in addition to the two 125 hp pumps installed during Phase 2B2. One of the 250 hp pumps would be used for an emergency or maintenance situation. Pump Station A1 would have a total of three pumps operating at 500 hp and the anticipated energy use would be 373 kW-hour.

Phase 2F would include the installation of one additional 250 hp pump to Pump Station A1. The 250 hp pump used for back-up in Phase 2E would continue to be the emergency back-up pump for Phase 2F. Phase 2F would include three 250 hp pumps and two 125 hp combining for 750 hp and 559.5 kW-hour.

The final upgrade to Pump Station A1 to convey flows up to 35 MGD would include the installation of two additional 250 hp pumps. The emergency back-up pump would continue to be a 250 hp pump. At build out of the east Otay Mesa area, Pump Station A1 would include five 250 hp pumps and two 125 hp pumps combining for 1,250 hp and 932.5 kW-hour.

It is expected that the energy usage for Pump Station A1 would consistently increase as the demand on sewer services increase as a result of development in the Otay Mesa area. The pump stations energy use would increase from the current usages of 74.6 kW-hour to approximately 932.5 kW-hour in 2020. It is assumed over the next sixteen years that the demand and production of electricity would increase to accommodate the future development in the area and the projects demands would not use an excessive amount of energy. The pump station would be designed to incorporate energy efficient components such as soft start motors, high efficiency motors, energy-efficient interior and exterior lighting and skylights. Furthermore, the pump station would be upgraded in phases to accommodate the growth of Otay Mesa. Phasing the upgrades of the pump station to meet the sewer demands of the surrounding areas would minimize the potential to waste energy. Pumps would be sized and operated to accommodate the flow requirements at that particular time. Additionally, the City of San Diego, during the land development permitting process, addresses any upgrades required to local distribution system on a project-by-project basis. As such, the City considers any such upgrades a non-CEQA issue (City of San Diego 2001). Therefore, the operation of the proposed pump station is not anticipated to result in the use of substantial amounts of fuel or energy, nor would it result in a substantial increase in demands upon existing sources of energy, or require the development of new energy sources.

Phase 2C may include the construction of new sewer pump stations to serve future developments on the west mesa to the south of Airway Road. These pump stations would be sized to serve the future development areas, and would require energy resources for operation. Since the size, number and locations of Phase 2C pump stations are unknown at this time, they would have the potential to use excessive amounts of fuel and energy.

SIGNIFICANCE OF IMPACT

Any pump stations constructed as part of Phase 2C would have the potential to result in the use of excessive amounts of fuel or energy during operation.

MITIGATION, MONITORING, AND REPORTING

Implementation of the following mitigation measure would reduce potential significant energy impacts associated with Phase 2C pump stations to below a level below significance.

Energy – 1: Any pump station(s) constructed as part of Phase 2C shall be designed to incorporate energy efficient components such as soft start motors, high efficiency motors, energy-efficient interior, and exterior lighting and skylights in order to avoid the excessive use of fuel or energy.

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CHAPTER 5.0

CUMULATIVE EFFECTS

Section 15130 of the CEQA Guidelines requires that an EIR address cumulative impacts of a project when the project's incremental effect would be cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project would be considerable when viewed in connection with the effects of past, current or probable future projects. A cumulative effect is not deemed considerable if the effect would be essentially the same whether the proposed project is implemented or not.

Probable future projects may be limited to those which: 1) have an application on file at the time that the Notice of Preparation is released; 2) are included in an adopted capital improvement program, general plan, regional transportation plan, or other similar plan; 3) are included in a summary of projections of projects (or development areas) designated in a general plan or a similar plan; 4) are anticipated as later phases of approved projects; or 5) are included in money budgeted by public agencies.

The basis for the analysis of cumulative impacts is dependent on the nature of the issue. According to Section 15130 of the CEQA Guidelines, the discussion of cumulative effects "...need not provide as great a detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness." The evaluation of cumulative impacts will be based on "a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside of the control of the agency." Present and probable future projects are addressed in this cumulative analysis, while past projects were considered as part of the existing setting and analyzed under each individual topic in Chapter 4. This analysis includes projects that require agency approval for an application, which have been received by the reviewing agency at the time of this Draft EIR, but does not include information that became known or available after the completion of the Draft EIR.

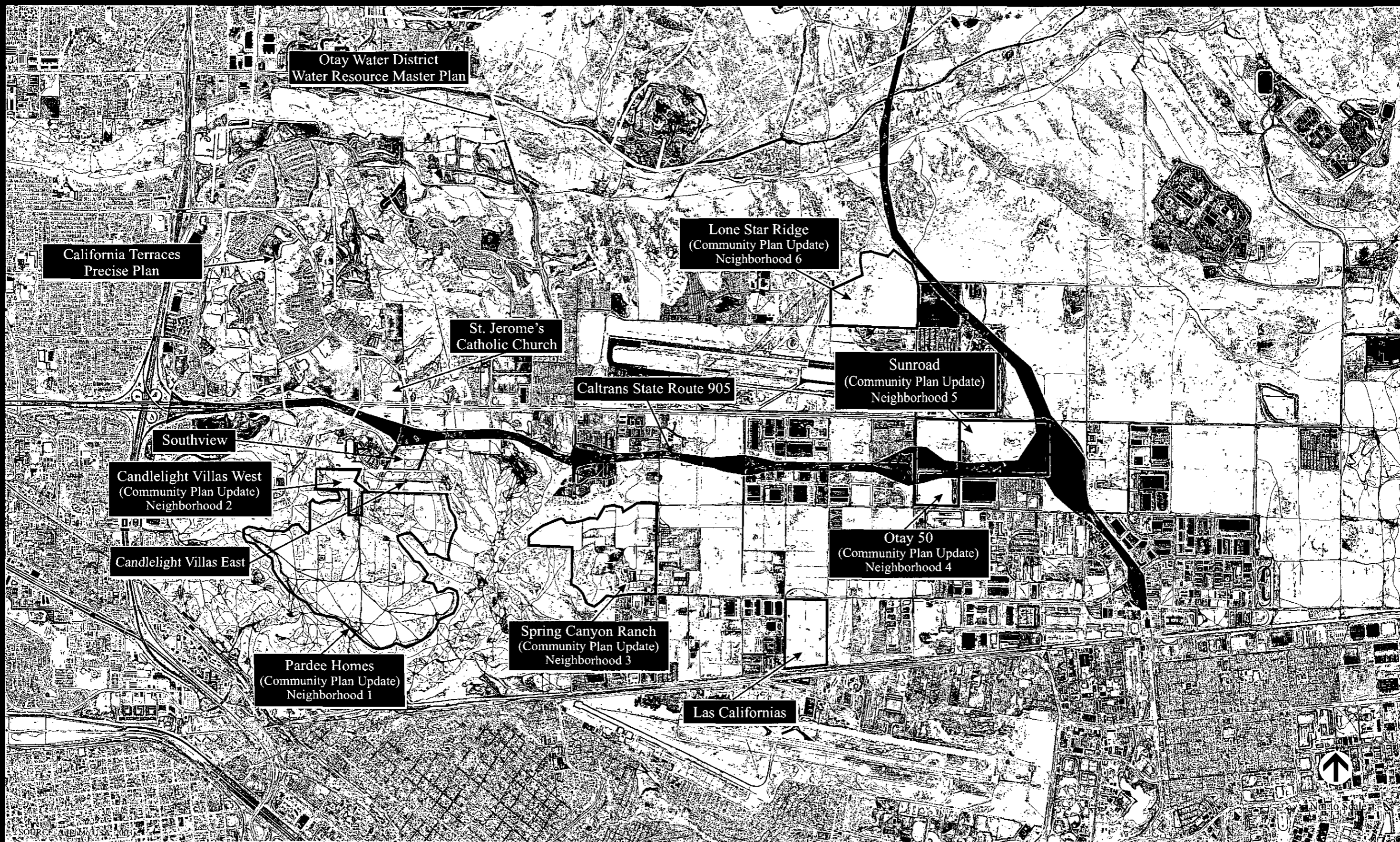
In addition, reasonable mitigation measures for cumulatively significant impacts should be discussed; however, CEQA acknowledges "with some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis."

5.1 CUMULATIVE PROJECTS

Potential cumulative projects were identified for analysis of cumulative impacts. These projects are listed below in Table 5.1-1, along with their location, brief description and status. See Figure 5-1 for the cumulative projects locations.

Table 5.1-1. List of Cumulative Projects

Project Name	Location	Project Description	Status
Caltrans' State Route 905	Extending from Interstate 805 (I-805) on the west to the Otay Mesa Border Port of Entry on the east.	Construction of a new six-lane, 6.2-mile divided freeway or tollway with sufficient right-of-way for the construction of two additional high-occupancy vehicle (HOV) lanes.	Final EIR approved and pending certification (SCH # 95031031)
Otay Water District's Water Resources Master Plan (WRMP) Update	Otay Water District jurisdiction.	The purpose of the WRMP is to develop proposed potable and recycled water capital improvement facility systems and associated probable costs estimates for the required pump stations, storage reservoirs, and transmission mains to meet the projected potable and recycled water market demands of existing and future customers within the jurisdiction of the Otay Water District.	Program EIR for the Water Resources Master Plan was circulated for public review between April 9 and May 24, 2004. (SCH # 2004011020). Final EIR was approved and certified by the Otay Water District Board of Directors on August 4, 2004.
California Terraces Precise Plan	Northwestern portion of the Otay Mesa community planning area between I-805 and Heritage Road.	Precise Plan proposes primarily residential uses on an approximately 665-acre site. Other proposed uses include four school sites, three parks, five commercial centers, and open space. Includes the construction of the Princess Park Estates Subdivision, located along the north side of Old Otay Mesa Road, which is currently under construction. This subdivision entails the construction of approximately 200 new single-family residences in the low-medium density range.	Covered under the California Terraces Precise Plan EIR certified in 1994 (SCH # 85022015) and the Addendum to the California Terraces EIR (California Terraces Offsite Sewer Connection, Project No. 23866) adopted in January 2004.
Otay Mesa Community Plan Update	Otay Mesa Community of the City of San Diego.	Comprehensive update of the Otay Mesa Community Plan including modifications to the various elements of the plan to reflect land use and circulation changes. The major revisions to the plan focus on re-designating land uses within six neighborhoods throughout the community planning area. Neighborhoods include a Pardee Homes development (Neighborhood 1), Candlelight Villas West (Neighborhood 2), Spring Canyon Ranch (Neighborhood 3), Otay 50 (Neighborhood 4), Sunroad (Neighborhood 5), Lonestar Ridge (Neighborhood 6). The update would re-designate Industrial uses to Residential, Commercial, and Park/School uses.	Notice of Preparation of a Draft Master EIR was published on May 12, 2004 and is currently being prepared.
St. Jerome's Catholic Church	Northwest corner of Otay Mesa Road and Ocean View Hills Parkway	Two-phase construction of a church, education building, and ancillary facilities. Phase I would include construction of the church building, an outdoor gathering area, a circular drop-off zone, and parking areas. Phase II would include an education center consisting of a parish hall/gymnasium, an outdoor amphitheater, and a preschool/elementary school. The project also includes an administrative office building and outdoor facilities. Requires a community plan amendment, conditional use permit, and site development permit.	Notice of Preparation of a Draft Environmental Impact Report was published on January 31, 2003.
Candlelight Villas East	In the community of Otay Mesa along Caliente Avenue south of Otay Mesa Road and near the intersection of Airway Road	Development of 469 multifamily attached dwelling units on 23.0 acres and open space on 2.3 acres. The development would consist of two- and three-story units, containing either two- or three-bedrooms within each unit. Project requires a community plan amendment, precise plan amendment, planned development permit, tentative map, and site development permit.	Notice of Preparation of a Draft Environmental Impact Report was published on October 5, 2004.
Southview	In the community of Otay Mesa east side of Caliente Ave, between Airway Rd and Otay Mesa Rd.	TM (to create 5 new lots) and Site Development Permit (for Environmentally Sensitive Lands) associated with 1 new multifamily residential project ("Lot 3") and 4 lots for future development, on a 57-acre site located on the east side of Caliente Ave, between Airway Rd and Otay Mesa Rd, in the AR-1-1 (rezone to RM-2-5), Environmentally Sensitive Lands (Steep Hillsides, Sensitive Vegetation, Vernal Pools), MHPA.	
Las California Center	In the community of Otay Mesa south of Siempre Viva Road and east of Britannia Boulevard and north of the U.S. Mexico Border in the Industrial Subdistrict of the OMDD.	TM to allow for the creation of 30 lots for industrial development and one lot dedicated to the border patrol corridor on an existing 68.5 acre site.	



CUMULATIVE PROJECT MAP

FIGURE 5-1

Most of the cumulative projects identified in Table 5.1-1 have not been adopted or constructed, with the exception of the California Terraces Precise Plan, which has been adopted and partially constructed. Because the California Terraces Precise Plan has been partially built, some of the construction-related impacts have already occurred and, therefore, would not be considered as contributing to potential cumulative construction-related impacts associated with the proposed project. Similarly, the operational effects associated with the built portions of the California Terraces Precise Plan project have also been accounted for as part of the description of the existing conditions for each issue topic addressed in Chapter 4.0 of this EIR.

5.2 CUMULATIVE IMPACT ANALYSIS

The following discussion of cumulative impacts is organized by each environmental topic addressed for the proposed project. At the beginning of each topical discussion, a description of the universe or area of influence for each topic is provided followed by an analysis of the cumulative effects.

5.2.1 LAND USE

The area of projects that would be considered for the land use cumulative effects analysis is defined as the Otay Mesa community planning area described in the Otay Mesa Community Plan (1981). The EIR prepared for the California Terraces Precise Plan indicated that the project would result in significant unmitigated impacts due to the project's inconsistency with the Resource Protection Ordinance (superceded by the Environmentally Sensitive Lands Regulations in 1999) and the environmental goals of the Otay Mesa Community Plan and Hillside Review Overlay Zone. The Final Program EIR for the Otay Water District Water Resources Master Plan identifies the project's potential to result in significant land use impacts if the project is not in conformance with the adopted land use plans, zoning requirements, community plans, specific plans, general development plans, habitat conservation plans, multiple species conservation plan, and environmentally sensitive lands regulations. The Update to the Otay Mesa Community Plan would revise the existing land use plan in the Otay Mesa area and would be expected to be consistent with other adopted land use planning documents that apply to the Otay Mesa planning area (e.g., MSCP). Therefore, this project would not have a cumulatively considerable contribution to a cumulative land use impact. The Final EIR for SR-905 identifies that City and regional planning documents have included the SR-905 project for many years and does not identify any inconsistencies with the applicable plan, policies and regulations. The proposed project is consistent with the major policies of the applicable planning documents and would result in a less than significant impact with respect to land use. St. Jerome's Catholic Church and Candlelight Villas East projects will both require amendments to the Otay Mesa Community Plan. Candlelight Villas East will also require a precise plan amendment to the Santee Investments Precise Plan. However, these projects are anticipated to be consistent with other applicable land use plans, including the MSCP. With implementation of the community plan and precise plan amendments, these projects would not have cumulative land use impacts on the environment. Therefore, while land use impacts associated with cumulative projects may be significant and cumulatively considerable, the proposed project would not result in significant direct or indirect land use impacts and would not have a cumulatively considerable contribution to land use impacts.

5.2.2 NOISE

The cumulative projects in the Otay Mesa area would result in construction and operational noise, including traffic-generated noise, which could result in a cumulative noise impact. The EIR for the California Terraces Precise Plan identified significant direct noise impacts that could be mitigated to below a level of significance. The Final EIR for the Water Resources Master Plan Update identified noise impacts that would occur primarily during construction and short-term in nature and that long-term noise from equipment or machinery would be mitigated to below a level of significance. The EIR for the Otay Mesa community Plan Update is anticipated to identify significant noise impacts from construction and operation, including mobile sources,

which could be mitigated to below a level of significance. The EIR/EIS for SR-905 identifies significant and mitigable direct noise impacts. The EIRs for St. Jerome's Catholic Church and Candlelight Villas East projects would likely result in significant, mitigable impacts with respect to construction and traffic noise. The proposed project would result in significant construction and operational noise impacts, which would be mitigated to below a level of significance with mitigation measures provided in Section 4.2 of this EIR/EIS. Because the proposed project is linear in nature, noise from construction activities would not impact the same sensitive receptors for more than a few days. Likewise, cumulative noise impacts resulting from the proposed project in combination with other cumulative projects would be unlikely, because of the linear nature of the proposed project, because construction is constantly progressing. In addition, the proposed project would be constructed in phases, in which construction would be spread out over a number of years and in different areas of Otay Mesa. The proposed project would not result in ongoing traffic-related noise generation or contribute to a significant cumulative impact with respect to ongoing traffic-related noise. Therefore, the proposed project would not result in a cumulatively considerable contribution to noise impacts.

5.2.3 PALEONTOLOGICAL RESOURCES

The area of projects that would be considered for the paleontological resources cumulative effects analysis is defined as the Otay Mesa community planning area. Paleontological resources are known to exist in the Otay Mesa area within the Quaternary Stream-Terrace Deposits, Lindavista Formation, San Diego Formation, Bay Point Formation and Otay Formation. The EIRs for the California Terraces Precise Plan (including the Addendum) and the Water Resources Master Plan Update, and the EIR/EIS for SR-905, all identify significant direct impacts to paleontological resources for each of their respective projects, which can be mitigated to below a level of significance. It is anticipated that the EIRs prepared for the Otay Mesa Community Plan Update, St. Jerome's Catholic Church and Candlelight Villas East would similarly result in potentially significant impacts to paleontological resources, which could be mitigated to below a level of significance. The proposed project's impacts to paleontological resources would be mitigated by the City's standard monitoring and recovery program. This mitigation measure would reduce potential significant impacts to below a level of significance. While development projects in Otay Mesa would result in the disturbance to the underlying geological units and the fossils that they contain, they also lead to the discovery of many fossil sites that have been documented and which have added to the natural history record for the region. Therefore, no cumulative paleontological resources impact would occur and the proposed project would not contribute to a cumulative impact.

5.2.4 UTILITIES

The area of projects that would be considered for the utilities cumulative effects analysis is defined as the Otay Mesa community planning area because this is the area where there would be both utility relocation and an increase in future utility demand and generation. With the exception of the California Terraces Precise Plan, the cumulative projects identified in Table 5.1-1 have not been constructed and would require new connections to utilities, some of which may require the upgrade or construction of new facilities. The California Terraces EIR determined that the project would have a significant and mitigable impact to the provision of sewer and water service. The Water Resources Master Plan Update Draft EIR determined that the project would not have significant impacts to utilities. The SR-905 EIR/EIS did not address impacts to utilities. It is anticipated that the Otay Mesa Community Plan update would have significant impacts to utilities due to the six neighborhood projects, and may require the upgrade or construction of new facilities. It is anticipated that adequate utilities are in place to serve the St. Jerome's Catholic Church project and thus this project would not result in a significant impact to utilities. The Candlelight Villas East project would require the extension of utilities services to the new residential areas, which may result in a significant mitigable impact to utilities. The proposed project is not expected to require the upgrade or construction of new utilities infrastructure, with the exception of sewer infrastructure, which is the proposed project. The

proposed project may result in conflicts with existing utilities, which would require the relocation of the utilities within roadways. However, this is not considered to be a significant impact because they would occur as part of the proposed project. Therefore, the proposed project would not contribute to a cumulatively considerable impact to the provision or relocation of utilities.

5.2.5 HISTORICAL RESOURCES

The area of projects that would be considered for the historical resources cumulative effects analysis is the Otay Mesa community planning area. The California Terraces EIR and Addendum mitigated significant impacts to archaeological resources with the implementation of a data recovery program. The EIR prepared for SR-905 determined that SR-905 would not result in significant direct or cumulative impacts to cultural resources. The Water Resources Master Plan Update Draft EIR identified a potentially significant direct impact to cultural resources, which could be reduced to less than significant or avoided by the mitigation measures proposed in this EIR. The Otay Mesa Community Plan Update, St. Jerome's Catholic Church and Candlelight Villas East projects would have the potential to impact cultural resources in the Otay Mesa area. However, it is likely that these impacts would be mitigated with measures similar to those proposed for the OMTS project because it would follow City requirements with respect to mitigation of impacts to these resources. The proposed project could result in significant mitigable impacts to unknown subsurface prehistoric or historic archaeological resources that may exist within the project alignment, as well as the 14 historical sites identified during the record search and literature review for the Phase 3 alignment. This direct impact would be mitigated through the implementation of a testing and mitigation program for the sites with undetermined site status shall be implemented based on CEQA, City of San Diego Historical Resource Guidelines, and the Otay Mesa Management Plan. Because the cumulative projects would mitigate impacts to historical resources with similar measures, a cumulative impact to historical resources would not occur in the Otay Mesa area. Therefore, the proposed project would not contribute to a cumulative impact.

5.2.6 AIR QUALITY

The area of projects that would be considered for the air quality cumulative effects analysis is defined as the San Diego Air Basin in San Diego County. This analysis includes all proposed future development within the county. The majority of the California Terraces Precise Plan project has been constructed, this project is considered as part of the air quality setting and impact analysis conducted for the proposed project in Section 4.6, Air Quality, in this EIR. The remaining projects, including SR-905, the Water Resources Master Plan Update, the Otay Mesa Community Plan Update, St. Jerome's Catholic Church and Candlelight Villas East, would have the potential to impact air quality. The SR-905 EIR/EIS determined that the SR-905 project would have less than significant direct and cumulative impacts on air quality. The Water Resources Master Plan Update Draft EIR identified temporary significant construction-related air quality impacts that could be reduced through mitigation measures. The Otay Mesa Community Plan Update would redesignate industrial areas of Otay Mesa to a mixture of residential, commercial and other compatible land uses. Therefore, air quality impacts associated with the Otay Mesa Community Plan Update project are anticipated to be long-term, mobile-source emissions, resulting from an increase in mobile source emissions from future development. The EIRs for St. Jerome's Catholic Church and Candlelight Villas East projects would likely result in short-term construction-related air quality impacts, as well as long-term, mobile-source emissions. The proposed project would not result in long-term air quality impacts or result in an increase in long-term mobile source emissions. The proposed project would have significant short-term construction-related PM₁₀ impacts that could be mitigated to below a level of significance. Because the County of San Diego is in non-attainment for PM₁₀ emissions, a margin for additional emissions is not available to future projects. The OMTS project's direct short-term PM₁₀ emissions, coupled with impacts associated with the construction of other future development projects in the area, would result in a significant cumulative air quality impact.

associated with PM_{10} during project construction. Therefore, implementation of the OMTS project is anticipated to result in a cumulatively considerable contribution to PM_{10} emissions.

5.2.7 BIOLOGICAL RESOURCES

The majority of the California Terraces Precise Plan has been constructed and its impacts to biological resources were addressed in the EIR prepared for the project. The California Terraces Precise Plan project was determined to have a significant unmitigable direct impact to Diegan coastal sage scrub and maritime succulent scrub habitats, vernal pools and a host of sensitive plant and animal species, but was not determined to have a significant cumulative impact to these habitats. The EIR/EIS for SR-905 found that the SR-905 project would have potentially significant direct impacts and potentially significant and unavoidable cumulative impacts to vernal pools and narrow endemic plant and animal species. This EIR/EIS also determined that SR-905 would have significant and mitigable direct impacts and less than significant cumulative impacts to coastal sage scrub habitat, San Diego Fairy Shrimp and the Quino Checkerspot butterfly. Impacts to non-native grassland were determined to be less than significant from the construction of SR-905. The Draft EIR for the Water Resources Master Plan Update identified that the project would have potentially significant direct impacts to biological resources, some of which could be significant and unavoidable. It is anticipated that the Otay Mesa Community Plan Update would have significant and potentially unmitigable impacts to biological resources in the undeveloped areas of the community plan that have been rezoned and are now planned for residential development. The EIRs for St. Jerome's Catholic Church and Candlelight Villas East projects would likely result in significant, mitigable impacts with respect to biological resources. The proposed project would only have a direct significant impact to 2.8-acres of non-native grassland, and several indirect impacts to biological resources, which would be mitigated to below a level of significance. Since none of the other cumulative projects would impact non-native grassland, the proposed project would not contribute to a significant cumulative biological resources impact.

5.2.8 HYDROLOGY/WATER QUALITY

The area of projects that would be considered for the hydrology/water quality cumulative effects analysis is defined as the Otay (10.00) and Tijuana (11.0) hydrologic units, within which the project is located. Projects that may occur in this watershed would be required to comply with the NPDES General Municipal and Construction permit requirements and would be required to implement construction and permanent storm water Best Management Practices (BMPs). These projects, as part of their development, would improve existing surface water quality runoff by implementing BMPs. Therefore, it is anticipated that the surface water quality runoff from these projects would be improved over existing conditions. Because the proposed project would generate only a small amount of surface pollutants at the site of the proposed Pump Station A1, the proposed project would not be expected to result in a cumulative water quality impact.

5.2.9 GEOTECHNICAL CONDITIONS

The area of projects that would be considered for the geotechnical conditions cumulative effects analysis is defined as the vicinity of the proposed project alignment. Geotechnical impacts for any of the cumulative projects listed in Table 5.1-1 would be relatively site specific. The EIR for the California Terraces Precise Plan identified significant impacts to geologic conditions and provided mitigation to reduce impacts to below a level of significance. The Draft EIR for the Water Resources Master Plan Update required the preparation of project specific geotechnical investigations as part of the design process to address geologic issues and impacts. Since Otay Mesa has several known faults, landslides, and erodible soils, it is likely that the Otay Mesa Community Plan Update would also result in significant and mitigable geotechnical impacts. The proposed project would have the potential to result in unstable soil conditions within the vicinity of the mapped landslide under Old Otay Mesa Road. The EIRs for St. Jerome's Catholic Church and Candlelight

Villas East projects would likely result in significant, mitigable impacts with respect to geotechnical conditions. This impact would be mitigated with a measure provided in Section 4.9 of this EIR. Since it is likely that each cumulative project would mitigate potentially significant geotechnical impacts, in accordance with applicable seismic building and engineering codes, these cumulative projects would not result in a significant cumulative impact. Therefore, the proposed project would not contribute to a cumulatively considerable geotechnical impact.

5.2.10 HAZARDOUS MATERIALS

The area of projects that would be considered for the hazardous materials cumulative effects analysis is defined as those projects within the vicinity of the proposed project alignment. Each of the cumulative projects identified in Table 5.1-1 may encounter contaminated soils or groundwater as part of excavation for pipelines and/or building excavations. No significant cumulative impacts were identified, with respect to contaminated soils, because compliance with applicable law and regulations that govern the handling of hazardous materials would protect workers and the general public from potential exposure risks. Furthermore, implementation of required local, state and federal regulations for the remediation of contaminated soils and groundwater, as well as the regulatory procedures for the storage and use of hazardous materials would result in a less than significant hazardous materials impact. As discussed in Section 4.10 of this EIR, implementation of the proposed OMTS project would have the potential to result in significant hazardous materials impacts during the construction of Phases 2A2, 2B1, 2B2, 2D, 2E, 2F, and 3 due to known or unknown contaminated soils and groundwater which may exist along the proposed project alignment. Mitigation measures *Hazardous Materials – 1* through *8* would be implemented to reduce this impact to a less than significant level. As a result, the proposed project's contribution to cumulative impacts associated with exposure to contaminated soil or groundwater, including development on or near hazardous materials sites, would not be cumulatively considerable.

5.2.11 VISUAL QUALITY/AESTHETICS

The area of projects that would be considered for the aesthetics/neighborhood character cumulative effects analysis is defined as the viewshed for proposed Pump Station A1. This pump station is the only aboveground structure that would be constructed as part of the OMTS project. None of the cumulative projects identified in Table 5.1-1 would be located within the viewshed of the proposed pump station. Most of the cumulative projects would have significant direct visual impacts, some of which are not mitigable. However, the viewshed for proposed Pump Station A1 does not contain any sensitive visual resources and would not result in significant unmitigable impacts to visual quality/aesthetics. Therefore, the proposed project would not result in a cumulative impact to visual quality/aesthetics.

5.2.12 ENERGY

The area of projects that would be considered for the energy cumulative effects analysis is defined as the San Diego region. The EIR for the California Terraces Precise Plan does not address energy in the discussion of impacts, however, it does identify that the project would result in the consumption of energy derived from nonrenewable sources. The SR-905 EIR/EIS found that the project would have a less than significant impact with respect to energy. The Draft EIR for the Water Resources Master Plan Update identifies that the project would require electrical and natural gas energy and would increase the demand for these services within the project area. Implementation of the Otay Mesa Community Plan Update, St. Jerome's Catholic Church and Candlelight Villas East projects would result in an increase in the demand for these services. The proposed project would require energy to provide sewer service to the existing and proposed developments in the Otay Mesa area and would be constructed in phases, which would allow for the efficient use of energy and would minimize the potential waste of energy. However, from a regional perspective, regional energy supplies have

been constrained in the past few years and therefore any increased demand in energy requirements could represent a cumulative significant impact. Therefore, the project's contribution to the cumulative energy impact would be cumulatively considerable.

CHAPTER 6.0

GROWTH INDUCEMENT

6.1 INTRODUCTION

Section 15126.2(d) of the California Environmental Quality Act (CEQA) Guidelines, as amended, requires the discussion of the ways in which a project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Such a discussion should also include projects that would remove obstacles to population growth, and the characteristics of a project, which may encourage and/or facilitate other activities that, either individually or cumulatively, could significantly affect the environment. CEQA emphasizes that growth in an area should not be considered beneficial, detrimental or of little significance. The purpose of this section is to evaluate the growth-inducing potential of the proposed OMTS project.

6.2 GROWTH INDUCING CRITERIA

In general terms, a project may foster spatial, economic or population growth in a geographic area if it meets any one of the criteria that are identified below.

- Removal of an impediment to growth (e.g., the establishment of an essential public service or the provision of new access to an area).
- Economic expansion or growth (e.g., construction of additional housing, changes in revenue base, employment expansion, etc.).
- Establishment of a precedent-setting action (e.g., an innovation, a change in zoning or general plan designation).
- Development or encroachment in an isolated or adjacent area of open space (being distinct from an "infill" type of project).

Should a project meet any one of these criteria, it can be considered growth inducing. An evaluation of the proposed project compared against these growth-inducing criteria is provided below.

6.3 GROWTH INDUCING IMPACTS OF THE PROPOSED PROJECT

6.3.1 REMOVAL OF AN IMPEDIMENT TO GROWTH

Growth in an area may result from the removal of physical impediments or restrictions to growth, as well as the removal of planning impediments resulting from land use plans and policies. In this context, physical growth impediments may include nonexistent or inadequate access to an area or the lack of essential public services (e.g., sewer service), while planning impediments may include restrictive zoning and/or general plan designations. The proposed project would not result in the removal of planning impediments to growth.

Implementation of the proposed OMTS project would result in the removal of a physical impediment to growth by providing new and upgraded sewer facilities in previously undeveloped and underdeveloped areas of Otay Mesa. The new and upgraded infrastructure would extend the existing sewer service area to allow for the construction of new development within the Otay Mesa community planning area. The proposed project would be constructed to accommodate the planned future growth of the community by the City of San Diego. According to the City, the Otay Mesa community planning area is envisioned to be a major employment center and home to a future population of 32,000 residents (City 2004). The *Otay Mesa Community Plan* (City 1981) is currently undergoing an update to establish a framework for future development in the Otay Mesa community. Processed concurrently with the Community Plan Update would be six planned residential neighborhood projects with a combined development area of approximately 975 acres within the Otay Mesa Community. These development projects, described in greater detail in Section 5.0, Cumulative Effects, would include construction of new residential, neighborhood commercial, mixed use, and school/park land uses. This planned growth would require the provision of essential public services, including sewer, water, and energy, in order to occur. The proposed project is considered to be both growth inducing and growth accommodating, because it would allow for the planned growth of the Otay Mesa community.

The proposed new sewer facilities have been sized to accommodate the ultimate build-out of the Otay Mesa community under the updated community plan. This calculation assumes that the community would be developed with the highest water and wastewater-demanding land uses allowed for under the community plan. The highest water and wastewater-demanding land uses identified in the updated community plan are industrial uses. In all likelihood, the ultimate build out of the proposed pipelines and pump stations (Phase 3) would not occur, or would occur on a smaller scale. However, from a planning perspective, the proposed project would be sufficient to serve the build out of the entire community.

The proposed project would remove one obstacle to growth in the Otay Mesa area by providing sewer facilities sufficient to serve the ultimate build out of the community under the community plan. However, other obstacles to growth would also need to be overcome in order for growth to occur. Adequate water facilities would be required, without which, the proposed sewer infrastructure would be useless. Energy, including electricity and natural gas transmission infrastructure, would need to be extended to future development areas as well. In addition, new energy substations may be required to serve the electricity demands of the future development area. An adequate transportation network, including new and improved roadways, would also be required to provide access to proposed development areas. These essential public services are currently provided in some areas of Otay Mesa, but would require expansion and construction of new service lines in order to accommodate the planned growth of the Otay Mesa region. All facilities would require adequate review in accordance with CEQA.

The proposed project could also be seen as a catalyst for the provision of other public facilities. That is to say that once one essential public service is provided, it allows for the justified provision of additional services, so that development in an area can occur. For instance, since the provision of new wastewater service is useless without adequate provision of water, the proposed project would be dependent upon the adequate provision of water, which would result in a need for new or expanded water infrastructure and facilities.

6.3.2 ECONOMIC GROWTH

The second criterion by which growth inducement can be measured involves economic considerations. In the short-term, the proposed project would provide for short-term construction employment opportunities. The proposed project would be constructed in phases, requiring construction activities and associated employment opportunities for various short-term durations of time over the next 45 years. It is anticipated that the construction contractor responsible for each construction phase would employ workers that live within the County of San Diego. These construction employees would be expected to commute to the project site from their permanent residences, rather than relocate to the project area for a temporary assignment.

Long-term economic growth associated with the proposed project is considered to be an indirect effect, because the proposed project itself does not propose the construction of new residential units or the accommodation of new jobs. Future development in the Otay Mesa community is planned for in the updated Otay Mesa Community Plan, which would involve changes in historical land use designations to allow for the construction of new residential neighborhood areas. As discussed in Section 6.3.1 above, the proposed project would remove an obstacle to this development through the provision of new and expanded sewer facilities. However, additional obstacles to growth, including the provision of other required public services, would also need to be removed for new development to occur. The actual construction of these neighborhood areas would induce economic growth in the Otay Mesa area, not the provision of sewer infrastructure. Thus, the proposed project would not directly induce long-term employment or population growth in the region, which would contribute to economic growth.

6.3.3 PRECEDENT-SETTING ACTION

Changes from a project that could be precedent-setting would include, but are not limited to, the following: a change in zoning, a change in general plan designation, a change in the general plan text, and approval of exceptions to regulations that could have implications for other properties or that could make it easier for other properties to develop. The proposed project is the construction of new and expanded sewer infrastructure facilities in the Otay Mesa area and would not require a change or exception to any adopted plans, policies or regulations. Therefore, the proposed OMTS project would not result in a precedent-setting action, which could facilitate the development of other projects.

6.3.4 DEVELOPMENT OF OR ENCROACHMENT INTO ISOLATED OR OPEN SPACE

Development can be considered growth inducing when it requires the extension of urban infrastructure into isolated localities, which are presently devoid of such facilities. The proposed OMTS project would provide phased construction of sewer infrastructure to serve the build-out of the Otay Mesa community. The proposed project would be located mostly within existing ROW along developed and underdeveloped areas of the Otay Mesa community. The existing developed areas of Otay Mesa are currently served with sewer service; however, some undeveloped areas of Otay Mesa, particularly on the west mesa, are not served with sewer service. Phase 2C of the proposed project would include the extension of sewer facilities into undeveloped areas of Otay Mesa that are currently without established infrastructure. Once basic utilities are

established in the Phase 2C areas, it is anticipated that they will be developed with mostly residential land uses. The Phase 2C areas would not be considered isolated, since they are within a few miles to developed areas of Otay Mesa, however, they might be considered semi-isolated. Therefore, the proposed project would induce growth under this criterion since it would result in the extension of infrastructure into semi-isolated areas that are currently devoid of such facilities.

CHAPTER 7.0

EFFECTS FOUND NOT TO BE SIGNIFICANT

State CEQA Guidelines Section 15128 requires that a Program Environmental Impact Report (Program EIR) contain a brief statement disclosing the reasons why various possible significant effects of a proposed project were found not to be significant and, therefore, would not be discussed in detail in the Program EIR. The City reviewed the proposed project against the potential environmental issues contained in the Initial Study (IS) Checklist. Based on the results of this evaluation, twelve environmental issue areas were found to have potentially significant impacts, all of which are addressed in Chapter 4.0, Environmental Analysis, of the Program EIR. The following environmental issue areas were found to have no potential for a significant impact: agricultural resources, mineral resources, population and housing, public services, recreational resources, transportation/parking, and water conservation. The reasons for the non-significance conclusion are provided below with a discussion of each issue. These issues are not discussed in further detail in this Program EIR.

7.1 AGRICULTURAL RESOURCES

The proposed OMTS project would not result in the conversion of prime farmland, unique farmland or farmland of statewide importance to non-agricultural uses, conflict with existing zoning for agricultural use or a Williamson Act contract, or involve other changes in the existing environment which could result in the conversion of farmland to non-agricultural use. The proposed sewer pipeline alignment would be located under existing and proposed roadway ROW and would not be located within existing or designated agricultural areas. Portions of the pipeline alignment would be located under roadways adjacent to agricultural uses, including La Media Road, Siempre Viva Road, Cactus Road, and Otay Mesa Road. However, the pipeline would be located underground and would impact existing agricultural uses or preclude any area's future agricultural use. Pump Station A1 would be located on a site zoned for industrial use that currently supports commercial, industrial and open space land uses. Therefore, the proposed OMTS project would not result in significant impacts to agricultural resources.

7.2 MINERAL RESOURCES

The proposed OMTS project would not result in the loss of availability of a known mineral resource that would be of value to the region or the loss of a locally-important mineral resource recovery site as delineated on a local general plan, specific plan or other land use plan. The proposed sewer pipeline alignment would be

located under existing and proposed roadway ROW and would not be located on any known mineral recovery sites. Proposed Pump Station A1 would be located on a site zoned for industrial use and currently supporting commercial, industrial and open space land uses. According to the report *Mineral Land Classification: Aggregate Materials in the Western San Diego County Production Consumption Region* prepared by the California Department of Conservation Division of Mines and Geology (1982), the proposed project alignment and pump station would not be located in areas identified as mineral resource zones for aggregate material. Therefore, the proposed OMTS project would result in significant impacts to mineral resources.

7.3 POPULATION AND HOUSING

The proposed OMTS project would not directly impact population growth in the Otay Mesa community because it does not propose the development of new homes or businesses. The proposed project would not displace substantial numbers of existing housing or persons either. The proposed sewer pipelines would be located under existing and proposed roadway ROW and would not affect existing or proposed housing. In addition, no existing housing is located on the preferred site for Pump Station A1. This proposed pump station would be located on a site that is zoned for industrial use and currently supports commercial, industrial and open space land uses. Thus, the project would not directly impact population growth or housing.

The proposed project would have the potential to indirectly accommodate population growth through the extension and upgrade of sewer pipelines and pump stations. The implementation of the proposed sewer facilities would remove an obstacle to growth in the region through the placement of sewer infrastructure in previously undeveloped areas and the upgrading of sewer infrastructure in developed areas. However, the population growth in Otay Mesa is not unplanned. According to the City of San Diego, the Otay Mesa community planning area is envisioned to be a major employment center and home to a future population of 32,000 residents (City 2004). The *Otay Mesa Community Plan* (City 1981) is currently undergoing an update to establish a framework for future development in the Otay Mesa community. The proposed sewer infrastructure would be sized to adequately serve the anticipated growth of the Otay Mesa community. The proposed project would be considered to be growth accommodating because it would allow for the planned growth of the area. Growth Inducement is discussed further in Section 6.0 of this EIR.

7.4 PUBLIC SERVICES

The proposed project would not have a direct impact on public services, including police, fire, schools, and parks, because it would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times or other performance objectives. The proposed sewer pipeline alignment would be located underground and would not physically impact any existing public facilities. The proposed pump station would be located in an area consisting of open space, industrial and commercial land uses and would not physically impact any existing public facilities. Existing police and fire protection in the Otay Mesa area would be adequate to serve the operation of the proposed pump station. No public services would be required to serve the proposed sewer pipeline. Therefore, the proposed project would not result in the need for new governmental facilities and no significant impacts to public services would occur.

7.5 RECREATIONAL RESOURCES

The proposed OMTS project would not increase the use of existing neighborhood and regional parks or other recreational facilities nor would it include recreational facilities or require the construction or expansion of recreational facilities. The proposed sewer pipelines would be located under existing roadway ROW and

would avoid canyons and other environmentally sensitive areas that may be used for recreational uses. The siting of the proposed pump station would also avoid areas designated for recreational uses. The proposed project would not result in the creation of jobs or housing that would have the potential to increase the use of existing recreational resources in the Otay Mesa area. Therefore, the proposed project would not adversely affect recreational resources.

7.6 TRANSPORTATION/PARKING

7.6.1 TRAFFIC GENERATION, CIRCULATION AND ACCESS

The proposed project would not cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system or exceed a level of service standard established by the county congestion management agency for designated roads or highways. The proposed project is the expansion and upgrade of sewer pipeline and pump stations and would not result in a substantial increase in vehicle trips. The proposed project would result in an increase in vehicle trips during construction; however, these impacts would be temporary and would be reduced through project features, such as project phasing, preparation and implementation of a traffic control plan, and nighttime/weekend construction activities. The proposed project would be phased to avoid major transportation impacts during construction and to reduce the duration of construction impacts to any particular area. A construction traffic control plan would be prepared and implemented during all phases of project construction to allow access to the affected roadways. During the construction of Phases 2A1 and 2A2, localized sections of Old Otay Mesa Road would be closed and alternative access routes would be identified on the construction traffic control plan. Phase 2B1 would involve temporary construction impacts to Beyer Boulevard, Center Street, East and West San Ysidro Boulevard and Via de San Ysidro Boulevard. The construction traffic control plan for Phase 2B would identify alternative routes for access to San Ysidro Middle School, businesses and residents that require the use of the impacted roadways. Phase 2D, which would construct a sewer pipeline under Otay Mesa Road, would not occur until the construction of SR-905 has been completed. This phasing would avoid traffic impacts during construction, as the operation of SR-905 would reduce traffic volumes on Otay Mesa Road. After construction is completed, roadways would be returned to the pre-project operating conditions. Therefore, transportation impacts would be temporary in nature and considered less than significant.

In addition, nighttime or weekend construction may occur during Phases 2B, 2E and 3 to avoid daytime traffic impacts along major thoroughfares during construction. During Phase 2B, nighttime/weekend construction may occur at the intersection of Otay Mesa and Old Otay Mesa Roads, to avoid daytime traffic impacts at this major roadway crossing. Also during Phase 2B, nighttime or weekend construction may occur at the I-5 and I-805 sewer crossings and possibly stretch in between, due to the busy nature of the freeway off-ramps/on-ramps in this area. Construction of Phases 2B, 2E and 3 along Cactus Road may also include nighttime or weekend construction because this is a narrow roadway. In addition, construction of Phase 3 along Siempre Viva Road may involve nighttime or weekend construction because this roadway is considered to be a major thoroughfare. Nighttime and weekend construction would be used to lessen traffic impacts that would occur on weekdays.

7.6.2 EMERGENCY ACCESS

The proposed project would not result in inadequate emergency access during construction. Emergency access for police/fire vehicles would be maintained along the project alignment at all times during construction. After construction, roadways would be returned to pre-project conditions and would not result in an alteration in access.

7.6.3 PARKING SUPPLY

The proposed project would not result in inadequate parking capacity. During construction, equipment staging areas and worker parking would occur on the side of the roadway, within the roadway ROW. The proposed pump station would include parking for maintenance and operations and would not be intended for public parking use. It is estimated that Pump Station A1 would have approximately five striped spaces for parking which would be adequate for the operation and maintenance of the proposed pump station. Therefore, impacts would not be significant.

7.7 WATER CONSERVATION

The construction of new sewer pipeline and the proposed pump station is not anticipated to require substantial amounts of water. Some watering of stockpiled soils would occur during construction; however, the water demand would be temporary in nature.

The daily operation of the proposed sewer pipeline would not require the use of water although maintenance (i.e., cleaning) of the sewer pipelines would be required a few times per year. The pipelines would be cleaned via high pressure flushing of pipeline segments, which would require the consumption of water. Typically, the amount of water used to clean each pipeline segment would be limited to the capacity of the water tank mounted on a Vactor truck, which is approximately 1,000 gallons. The water demand for the maintenance of sewer pipelines would also be temporary in nature.

A small amount of water would be required for operation of proposed Pump Station A1. Water demands at the pump station would be limited to restroom facilities and routine maintenance/cleaning activities such as washing the floors. Pump Station A1 would be manned by one person for approximately 40 hours per week. Thus, water demands for restroom facilities and maintenance/cleaning activities would be limited to 40 hours per week and would not be considered excessive. Impacts would be considered less than significant.

CHAPTER 8.0

UNAVOIDABLE AND IRREVERSIBLE SIGNIFICANT ENVIRONMENTAL EFFECTS

Section 15126.2 (b) and (c) of the CEQA Guidelines requires that an EIR address any significant environmental effects which cannot be avoided, and any irreversible changes to the environment that may result from implementation of the proposed project, respectively.

Significant environmental impacts for twelve issue areas have been identified in Chapter 4.0, *Environmental Analysis*, of this EIR. All of the significant impacts associated with the proposed OMTS project would be mitigated to below a level of significance. Therefore, the project would not result in significant environmental effects that cannot be avoided.

For the most part, implementation of the proposed OMTS project would not result in irreversible environmental changes. However, construction of the proposed project would involve an irreversible commitment of natural resources such as concrete, steel, other construction materials, and fossil fuels. In addition, the operation of the proposed project would require the irreversible commitment of energy and water resources. Natural resources, energy and water are considered to be nonrenewable resources, since once the proposed project is constructed the demand for these resources would essentially be irreversible. In addition, the proposed OMTS project would involve the loss of environmentally sensitive lands, including 2.8 acres of non-native grassland habitat, due to the construction of proposed Pump Station A1. While these impacts would be mitigated to below a level of significance, they would result in an unavoidable and irretrievable loss of sensitive biological habitat. The remaining environmental issues would not result in significant irreversible environmental changes.

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CHAPTER 9.0

ALTERNATIVES

The State CEQA Guidelines indicate that EIRs are required to evaluate a "...range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain the basic objectives of the project" (Section 15126.6(a) State CEQA Guidelines). The project objectives, as stated in Section 3.2 of this EIR, are reiterated below.

1. Extension of the existing OMTS system to accommodate future flows in the Otay Mesa area and to provide greater capacity to convey wastewater.
2. Provide sewer service to the currently underdeveloped western portion of Otay Mesa, including new developments along Old Otay Mesa Road.
3. Upgrade of the eastern portion of the Otay Mesa sewer system to accommodate build-out flows.
4. Upgrade the capacity of existing temporary Pump Station 23T from 2 million gallons per day (MGD) to 4 MGD.
5. Construct a new Pump Station A1 with a capacity of up to 35 MGD, which would replace temporary Pump Station 23T.
6. Provide upgraded and new sewer service pipelines in the Otay Mesa area within existing right-of-way (ROW) in order to minimize environmental impacts.
7. Provide upgraded and new sewer service in Otay Mesa over a phased implementation timeline in which facilities are built, as they are needed and in coordination with other major projects in the area.
8. Direct the majority of all sewer flows from the Otay Mesa area to the San Ysidro Interceptor via the OMTS sewer and minimize or eliminate flows to the Otay Valley Trunk Sewer.

The discussion of alternatives should focus on "...alternatives capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives could impede to some degree the attainment of the project objectives or would be more costly" (Section 15166.6(b) State CEQA Guidelines). Based on the State CEQA Guidelines, the following project alternatives to avoid or reduce significant project impacts were identified and are addressed in this EIR: the No Project Alternative, Deep Sewer Alternative, and the Canyon Ridge Alternative. The Deep Sewer Alternative would be the environmentally superior alternative because it would have the least amount of significant environmental impacts.

CEQA further directs that "...the significant effects of the alternatives shall be discussed, but in less detail than the significant effects of the project as proposed" (Section 15126.6(d) State CEQA Guidelines). Within this chapter, in Section 9.2, each of the above alternatives is described and their significant effects are

discussed. The locations of these alternatives are illustrated on Figure 9-1. A discussion of alternatives considered but rejected is included in Section 9.1.

9.1 ALTERNATIVES CONSIDERED BUT REJECTED

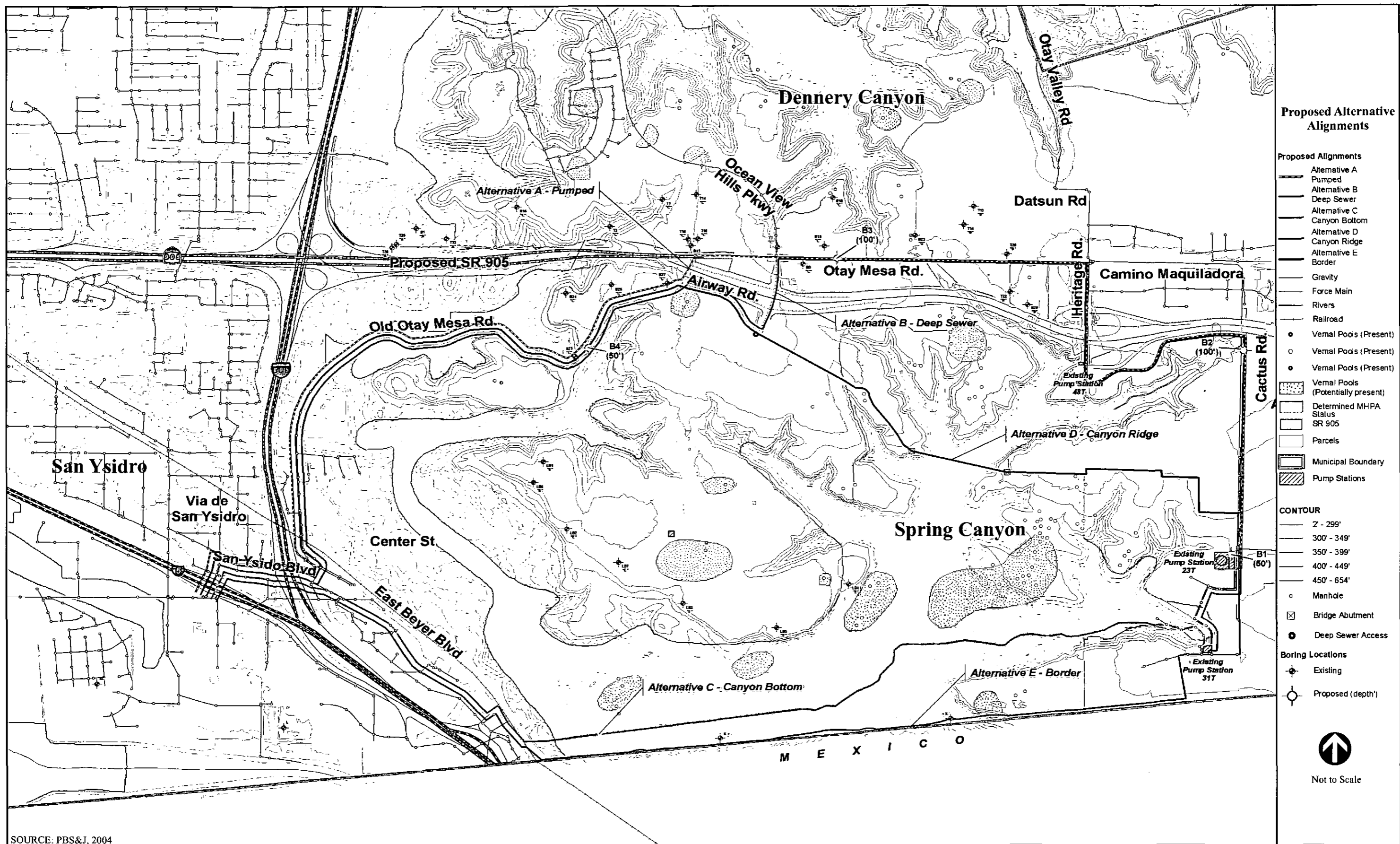
During the planning of the proposed OMTS project, a multi-phase screening process was developed in order to narrow down the large number of possible alignments and determine a preferred alignment. The screening process included a coarse screening element, which used a rating system to pick the five best overall alternative alignments, a critical technical issues analysis, which was used to identify any fatal flaws of the selected alternatives, and a fine screening element, which evaluated the remaining alignments to determine which one would be most suitable for the preferred alignment. A summary of each phase of the screening process is provided below.

9.1.1 COARSE SCREENING ANALYSIS

The coarse screening analysis was initiated through the identification of over 400 possible alignments to convey the sewage from the existing temporary Pump Station 23T across Otay Mesa to the San Ysidro Interceptor Sewer. Possible alignment constraints were determined based on a review of land between the connections points of each possible alignment. Identified constraints included interstate freeways, railroad crossings, canyon areas, Multiple Species Conservation Program (MSCP) areas, the international border, and other environmental constraints. The review of alignment constraints narrowed the possible alternative alignments from 400 to 167.

Next, all remaining possible alignments were broken into segments, referred to as reaches, in order to analyze the alignment alternatives. Each alignment was categorized into one of the following five concepts:

- **Alternative A – Pumped:** The pumped alternative alignments would require the construction of a new sewer pump station within the vicinity of existing Pump Station 23T to pump to a high point along Otay Mesa Road. From the high point, the sewage would gravity flow to the San Ysidro Interceptor Sewer (18 possible alignments).
- **Alternative B – Deep Sewer:** The deep sewer alignments would avoid most of the canyon areas on the mesa while maintaining gravity flow. In order for this to occur, depths of the pipeline would range from 30 to 140 feet belowground. With additional grading for future developments or future street alignments, the depths would potentially be decreased (40 possible alignments).
- **Alternative C – Canyon Bottom:** The canyon bottom alignment concept would place the pipeline alignment in the natural drainage flow along the canyon bottoms parallel to the U.S./Mexico international border (18 possible alignments).
- **Alternative D – Canyon Ridge:** This alignment concept would place the pipeline just below the mesa edge and above the canyon bottoms. The canyon ridge alternatives would have gravity systems that would minimize tunneling but would potentially require some single-lane bridges to provide maintenance access (88 possible alignments).
- **Alternative E – Border:** This alignment concept would have the sewer alignment follow the United States/Mexico international border as much as possible. The U.S. Border Patrol currently has easement rights that range from 100 to 500 feet north of the border. Construction within 250 feet of the border would require a permit from the International Boundary and Water Commission (IBWC) and approval from the Mexican government (3 possible alignments).



PROPOSED ALTERNATIVE SEWER PIPELINE ALIGNMENTS

FIGURE 9-1

After all alignments were categorized, the project team and City staff, including representatives from MWWD and Development Services, developed the coarse screening process criteria. In April 2002, this committee reached a consensus regarding the key issues to be evaluated in the coarse screening analysis. The criteria include accessibility to developments within the mesa, environmental and social impacts, institutional involvement, hydraulic operation and reliability, constructability, construction capital costs, operation and maintenance costs, and schedule. A rating system was developed to rank degrees of severity for each criterion and a weighting system was developed to rank the importance of each criterion. The rating system was based on a scale of 0 to 5 for each of the major categories. Low numbers indicate lower feasibility and/or potentially higher impacts while higher numbers indicate more favorable conditions and/or benefits along a given reach. The lowest impact reach or best-case condition would have a score of 5 and the highest impact reach would have a score of 1. A score of 3 is defined as having an average impact or a neutral condition and a score of 0 indicates the alternative would have a fatal flaw.

Prior to calculating the total scores from each rating category for each reach, the weighting factor for each category was applied to adjust the scores for their importance in selecting between alignments. Weighting represented the contribution that a category's rating should have on the overall score of the reach in deciding between alignments. It was based on the factors considered for each category during the rating process, a comparison of the categories, and the range of the issues considered for rating of each category. Table 9-1 summarizes the weighting criteria of each coarse screening category. This table also includes the weighting criteria for the fine screening analysis categories, which are discussed in Section 9.1.3 of this EIR.

The alignment with the best overall score for each of the five concepts for crossing Otay Mesa was recommended for further evaluation in the fine screening process. The Otay Valley Trunk Sewer alternative, which would involve the upsizing and continued use of the Otay Valley Trunk Sewer, was also carried to this next level of screening as a basis of comparison for all of the concept alternatives. The concept alignments of the five alternatives selected during the coarse screening analysis are described below. Table 9-2 summarizes the key considerations encountered within each coarse screening category for each of the preferred alignments.

ALTERNATIVE A – PUMPED

Alternative A -- Pumped represented the pumped concept with a combination redundant force main and gravity sewer. This alignment would begin at a proposed pump station to be located in the vicinity of Cactus Road and Siempre Viva Road and continue northward to Camino Maquiladora. The alignment would follow Camino Maquiladora west to the proposed Heritage Road under-crossing of SR-905 and continue north to Otay Mesa Road. At Otay Mesa Road, the alignment would turn west and continue along Otay Mesa Road to Old Otay Mesa Road. The alignment would then follow Old Otay Mesa Road southwest to East Beyer Boulevard. The alignment would cross under the elevated railroad tracks along East Beyer Boulevard. At Center Street, the alignment would turn northwest for one block to San Ysidro Boulevard and would then cross under I-805. The alignment would follow San Ysidro Boulevard northwest to Via de San Ysidro and would cross under I-5. The alignment would meet with the San Ysidro Interceptor near the intersection of Via de San Ysidro and Calle Primera.

Advantages to the pumped alternative would be that the force main would allow a longer portion of shallow gravity sewer to be constructed and this alignment would be almost entirely within existing roadway ROW. Disadvantage to the pumped alternative would be the inclusion of a pump station, which is generally less reliable and more maintenance than gravity alternatives.

Table 9-1. Weighting Criteria for the Coarse and Fine Screening Categories

Screening Category	Weighting (%)		Reasoning
	Coarse Screening	Fine Screening	
Accessibility to Developments within Otay Mesa	10	0	<ul style="list-style-type: none"> Development community is a prominent stakeholder encompassing in this category Many sewerage opportunities exist for most reaches Eliminated from Fine Screening because all alternatives provide adequate accessibility to developments
Environmental and Social Impacts	25	22	<ul style="list-style-type: none"> Issues can become fatal flaws, or may affect schedule, cost and project design Discretionary decision making for project requires consideration of these issues Many stakeholders for environment and the community
Institutional Involvement	11	10	<ul style="list-style-type: none"> Obtaining appropriate agency agreement can vary substantially between agencies
Hydraulic Performance and Reliability	13	14	<ul style="list-style-type: none"> Operations, reliability, and conformance to City standards are important to long term costs and to long term environmental impact
Constructability	11	16	<ul style="list-style-type: none"> Bridge, deep sewers, tunneling and geotechnical constraints are some of the issues which make constructability important
Construction Capital Costs	16	0	<ul style="list-style-type: none"> The initial capital costs must be distributed to developers and because of the various alternatives considered can be relatively average for gravity sewers, or extremely costly for pump stations and bridges Combined with Operation and Maintenance Costs in Fine Screening Project Cost Category
Operation and Maintenance Costs	10	0	<ul style="list-style-type: none"> The long-term costs will be distributed to the future owners/residents of the service area and can also vary substantially between reaches Combined with Construction Costs in Fine Screening Project Cost Category
Project Costs	0	22	<ul style="list-style-type: none"> Construction and life cycle costs are critical to project's long term feasibility
Schedule	4	6	<ul style="list-style-type: none"> Although very important, most reaches can be completed within the same timeframe making this rating less important
Phasing	0	10	<ul style="list-style-type: none"> Critical to feasibility of project to accommodate long term growth projections in Fine Screening Analysis only

Table 9-2. Coarse Screening Final Alignments

Category Description	Alternative A Pumped	Alternative B Deep Sewer	Alternative C Canyon Ridge	Alternative D Canyon Bottom	Alternative E Border
Accessibility	<ul style="list-style-type: none"> Development in Central South Mesa would require a pump station Other areas by gravity flow 	<ul style="list-style-type: none"> Development in Central South Mesa would require a pump station 	<ul style="list-style-type: none"> Development in Central South Mesa would require a pump station Accessibility across canyon along bridge is difficult 	<ul style="list-style-type: none"> Development in North West Mesa and Central Northeast Mesa would require pump station of deep sewer to Central South Mesa Central South Mesa gravities via 2,000 LF lateral to canyon bottom 	<ul style="list-style-type: none"> Development in North West Mesa and Central Northeast Mesa would require pump station of deep sewer to Central South Mesa Central South Mesa gravities via 2,000 LF lateral to canyon bottom
Environmental	<ul style="list-style-type: none"> Mostly in existing roads and easements Crosses wildlife corridor Some Diegan Coastal Sage scrub and archaeological sites near ROW 	<ul style="list-style-type: none"> Some Coastal Sage Scrub and vernal pool watersheds near alignment Some portions in MHPA Much of alignment in existing roads and easements 	<ul style="list-style-type: none"> Bridge is visual impact Portion of pipeline and bridge crosses MHPA Construction of bridge across canyon may result in potential impacts to Southern Willow Scrub, canyon bottom biology and wildlife 	<ul style="list-style-type: none"> Much of canyon areas are within MHPA, MSCP and wetlands Impacts to Southern Willow Scrub, canyon bottom biology and wildlife Potential impacts to waters of United States Some of alignment is in existing roads or Border Patrol access roads 	<ul style="list-style-type: none"> Some reaches in MHPA, MSCP, vernal pools potentially present Heavily disturbed by Border Patrol
Institutional	<ul style="list-style-type: none"> MWWD CalTrans Railroad City of SD USFWS CDFG 	<ul style="list-style-type: none"> High School CalTrans Railroad City of SD Border Patrol USFWS CDFG 	<ul style="list-style-type: none"> High School CalTrans Railroad City of SD Border Patrol USFWS CDFG 	<ul style="list-style-type: none"> FBI CalTrans City of SD Border Patrol USFWS CDFG 	<ul style="list-style-type: none"> CalTrans City of SD Border Patrol USFWS CDFG
Hydraulic Operation and Reliability	<ul style="list-style-type: none"> Requires construction of pump station with redundant pumps, telemetry, dual forcemain and emergency storage Gravity in much of alignment May have high I&I because of wetlands 	<ul style="list-style-type: none"> Gravity sewer May have I&I in deep reaches and high I&K in crossing wetlands 	<ul style="list-style-type: none"> Gravity sewer May have I&I in some reaches and high I&K in crossing wetlands 	<ul style="list-style-type: none"> Gravity sewer May have I&I in some reaches and high I&K in crossing wetlands 	<ul style="list-style-type: none"> Gravity sewer May have I&I in deep reaches and high I&K in crossing wetlands

Table 9-2 Continued

Category Description	Alternative A Pumped	Alternative B Deep Sewer	Alternative C Canyon Ridge	Alternative D Canyon Bottom	Alternative E Border
Constructability	<ul style="list-style-type: none"> Shallow pipe because of forcemain. Located in or near ROW High traffic areas (might require nighttime work) and crowded utilities in ROW Jack & bore under railroad, and freeway crossing Requires directional drilling for Tijuana River crossing 	<ul style="list-style-type: none"> Mostly tunneling because of deep sewers (>60 ft deep) Difficult accessibility Depth of sewer requires special approval ft deep Jack & bore under railroad, and freeway crossing Requires directional drilling for Tijuana River crossing 	<ul style="list-style-type: none"> Mostly tunneling because of deep sewers Requires construction of bridges Difficult accessibility Jack & bore under railroad, and freeway crossing Requires directional drilling for Tijuana River crossing 	<ul style="list-style-type: none"> Mostly trenching because of shallow sewers Removal and recompaction of alluvial soils Has wide area of access or in ROW for some reaches Potential flooding/wetlands Jack & bore under railroad, and freeway crossing Requires directional drilling for Tijuana River crossing 	<ul style="list-style-type: none"> Has wide area of access or in ROW Jack & bore under railroad, and freeway crossing Tunneling required for some reaches Potential landslide areas Construction near International Border issues Requires directional drilling for Tijuana River crossing
Construction and Capital Costs	<ul style="list-style-type: none"> Cost includes pump station and dual forcemains 	<ul style="list-style-type: none"> Cost includes tunneling or deep sewer 	<ul style="list-style-type: none"> Cost includes tunneling and bridges 	<ul style="list-style-type: none"> Cost includes environmental mitigation 	<ul style="list-style-type: none"> Costs include environmental mitigation
Operation and Maintenance	<ul style="list-style-type: none"> High O&M costs because of pump station 	<ul style="list-style-type: none"> Moderate O&M costs 	<ul style="list-style-type: none"> Low O&M costs 	<ul style="list-style-type: none"> Low O&M costs 	<ul style="list-style-type: none"> Low O&M costs

ALTERNATIVE B – DEEP SEWER

Alternative B – Deep Sewer would start at a depth of 30 feet belowground at the existing Pump Station 23T, which would no longer be needed, and would generally follow the same alignment as Alternative A – Pumped. Implementation of this alternative would no longer necessitate the use of Pump Station 23T. The 30-foot-deep sewer pipeline would be located under Cactus Road and would quickly transition into a deep sewer approximately 400 feet north of Pump Station 23T. The alignment would follow Cactus Road to Camino Maquiladora and cross the proposed SR-905 via the proposed Heritage Road under-crossing. After crossing SR-905, the alignment would continue west on Otay Mesa Road to Caliente Road. At this point, the alignment would differ from Alternative A – Pumped because it would follow Caliente Road to Airway Road to Old Otay Mesa Road. The alignment would then continue along Old Otay Mesa Road similar to Alternative A – Pumped alignment. The deep sewer would transition to shallow depths in Old Otay Mesa Road.

Advantages of this alternative are that a large pumping station to convey flows to the gravity sewer would not be required and the majority of the alignment would be in existing roadway ROW or easements and not located in the canyons. The main disadvantage of the deep sewer alternative would be the constructability of a sewer pipeline that would be over 140 feet deep at maximum depth. Constructability issues would be associated with the depth of the sewer main, construction access pits for tunneling, and manhole connections. *Parallel shallow sewer mains would also be required to convey sewage from local development to the deep sewer.*

ALTERNATIVE C – CANYON RIDGE

Alternative C – Canyon Ridge proposes a gravity alternative that would follow through the mesa portion of the proposed development. The Alternative C – Canyon Ridge alignment would begin at the site of existing Pump Station 23T (which would no longer be needed) as a deep sewer under Cactus Road and travel approximately 650 feet to the north of the pump station. The alignment would continue west on proposed future roads to Spring Canyon. This alignment would require the construction of a bridge over a portion of Spring Canyon. After crossing the canyon, the alignment would be located in the ROW of the proposed Airway Road extension. Thereafter, the alignment would continue west under Airway Road to Old Otay Mesa Road. Once under Old Otay Mesa Road, the alignment would be the same as Alternative A – Pumped and Alternative B – Deep Sewer.

This alternative would have similar advantages and disadvantages as Alternative B – Deep Sewer. One advantage of this alternative would be the alignment length with a reduction by approximately 6,000 feet as opposed to the deep sewer alternative, which would be approximately 350,000 feet. A major disadvantage was the requirement of a bridge crossing at Spring Canyon.

ALTERNATIVE D – CANYON BOTTOM

Alternative D – Canyon Bottom represents the canyon bottom alignment that proposes a gravity alternative that would start at the site of existing Pump Station 23T (which would no longer be needed) and extend south under Cactus Road to Calle de Linea. Turning west on Calle de Linea, the alignment would pass existing Pump Station 31T and continue through Wruck Canyon to the southern portion of Spring Canyon. From this point, the alignment would continue west through the southern portion of Spring Canyon and beneath Airport Mesa, which is a large flat area adjacent to the international border. After crossing the trolley tracks, the alignment would intersect with San Ysidro Boulevard and continue north under this roadway to the crossing of I-805. From the crossing at I-805, the alignment would be the same as in Alternative A – Pumped.

The main advantage of the Canyon Bottom alternative would be relatively shallow sewer mains due to the natural drainage pattern of the area. An exception to this would be at Airport Mesa where deep tunneling would be required. Another advantage would be the available access to the trunk sewer from the mesa areas. Disadvantages to the canyon bottom alignment would be the many environmental issues associated with canyon bottoms and the potential for major landslides.

ALTERNATIVE E – BORDER

Alternative E – Border represents the border alignment and would begin along the same alignment as Alternative D – Canyon Bottom. However, the alignment would turn south along Calle de Linea to the easement along the international border. Once in the easement, the alignment would turn west and follow the border across the trolley tracks to San Ysidro Boulevard. At San Ysidro Boulevard the alignment would turn north and would be the same as the alignment in Alternative D – Canyon Bottom.

The main advantage of the border alignment would be the location of the majority of the alignment within existing street ROW and easements. Permission would be required from the governing agencies for easement acquisition. The majority of the alignment would also be located in disturbed habitat areas, which would minimize potential environmental impacts to biological resources. A disadvantage of the border alternative would be the major landslide areas identified along the alignment, which would complicate the constructability of the alternative to the point of being a fatal flaw. In addition, the sewer project would be located far from the development that it would serve. For security reasons, the Border Patrol indicated that they would prefer that this alternative not be selected. Approval from the Mexican Government, the U.S. Federal Government and the IBWC would also be required.

9.1.2 CRITICAL TECHNICAL ISSUES ANALYSIS

The five concept alternative alignments selected during the coarse screening analysis and a “baseline” alternative were evaluated for critical technical issues in order to determine if any of these alignments would have a fatal flaw or require significant modification. The “baseline” alternative would involve the use of the existing Otay Valley Trunk Sewer to convey all the Otay Mesa wastewater flows and would require improvements to increase capacity and replace temporary Pump Station 23T with a permanent facility. This sixth alternative is herein referred to as Alternative OV – Otay Valley.

The critical technical issues analysis obtained specific technical information, which was then used to identify if any of the alternative alignments would have a fatal flaw. The information obtained for the critical technical issues analysis included the following

- Geotechnical conditions in Spring Canyon and along the international border;
- Traffic circulation requirements along Otay Mesa Road and Airway Road;
- Regulatory requirements for construction along the international border;
- Feasibility, impacts and costs of connecting sewer mains;
- Geotechnical/environmental feasibility of constructing a bridge across Spring Canyon;
- Pump station design and reliability requirements;
- Constructability and traffic impacts of installing two 42-inch mains in Cactus and Otay Mesa Roads;
- Coordination requirements with Caltrans proposed SR-905 project; and
- Hydraulic capacity of the San Ysidro Interceptor and flow projections.

From the critical technical issues analysis, it was determined that the alignment along the international border was fatally flawed due to the crossing of an extensive landslide area. Based on the geotechnical evaluation of this concept alignment, it was determined that a pipeline constructed across/through this landslide would potentially be subject to displacement and catastrophic failure in the event of slide movement. The landslide extends across the border and the impacts of construction of this pipeline would include displacement of soils in Mexico. Based on this analysis, Alternative E – Border was eliminated from further analysis.

In addition, Alternative D – Canyon Bottom was also eliminated due to environmental constraints associated with the sensitive biological areas of the canyons and landslide areas. Therefore, based on the results of the coarse screening and critical technical issues analyses, a total of four alignments were forwarded to the fine screening analysis. These alignments include Alternative A – Pumped, Alternative B – Deep Sewer, Alternative C – Canyon Ridge, and Alternative OV – Otay Valley.

9.1.3 FINE SCREENING ANALYSIS

FINE SCREENING PROCESS

The purpose of the fine screening analysis was to further assess and compare the remaining three concept alternative alignments that were selected during the fine screening process with the “baseline” Alternative OV – Otay Valley. The evaluation of the alternative alignments in the fine screening analysis was based on the following seven project goals:

- Minimize environmental and social impacts;
- Minimize potential construction risks;
- Minimize institutional constraints;
- Maximize hydraulic performance and reliability;
- Minimize permitting and construction schedule;
- Minimize construction costs; and
- Minimize operation and maintenance costs.

Each of the goals listed above was developed into its own fine screening category. Each screening category was determined to have its own unique set of criteria to use in rating it. The four alternative pipeline alignments were assessed on a rating system based on a scale of 0 to 5 for each criterion. Similar to the rating system used during the coarse screen analysis, low numbers indicate lower feasibility and/or potentially higher impacts. Higher numbers indicate more favorable conditions and/or benefits along that alignment. Zero indicates a fatal flaw. However, in the critical technical issues analysis, alternatives with fatal flaws were eliminated. Therefore, no zeros were applied in the ratings. The scoring of each alignment was based on a relative score that compared the benefits and impacts with the other alignments. Members of the project team having specific knowledge or expertise of the screening categories performed the rating of the alignments.

The project team also developed both category and criterion-weighting factors independent from the rating results. The weighting factors for each fine screening category are identified in Table 9-1. The weighting factors for the fine screening criteria within each category are identified in Table 9-3. Once completed, the rating results were compiled and calculated with the applied weighting factors. The weighted scores for each alternative were added to determine a final score. The Fine Screening Analysis is provided as Appendix H to this EIR.

Table 9-3. Fine Screening Categories and Weighting Criteria

Category	#	Fine Screening Criteria	Weighting (%)
Environmental and Social Impacts	1	Biological Resources/MSCP	30
	2	Cultural Resources	12
	3	Visual Resources	2
	4	Noise	5
	5	Air Quality	3
	6	Water Quality	13
	7	Traffic	30
	8	Hazardous Materials	5
Constructability	9	Geological Conditions	20
	10	Construction Access and Safety	20
	11	Groundwater	4
	12	Utility Conflicts	20
	13	Water Availability	1
	14	Risk	35
Institutional	15	San Diego County	10
	16	Local Planning Groups	5
	17	CalTrans	35
	18	MTDB	5
	19	SDG&E	5
	20	Property/Easement Acquisition	10
	21	Environmental Permitting	30
Hydraulic Performance and Reliability	22	Conformance to City Design Criteria	10
		Reliability	
	23	I&I Potential	30
	24	Accessibility to Service Areas	5
	25	O&M Accessibility	25
Schedule	26		30
	27	Critical Path Items	5
	28	CalTrans Coordination Opportunities	25
	29	Property and Easement Acquisition	15
	30	Impact of Development	20
	31	Permits	20
	32	Seasonal Constraints	5
	33	Limitations on Night Time Construction	10
Project Costs	34	Construction Costs	60
	35	Life Cycle Costs	40
Phasing	36	Environmental	30
	37	Constructability	25
	38	Institutional	5
	39	Hydraulics	5
	40	Schedule	5
	41	Project Costs	30

RESULTS OF THE FINE SCREENING ANALYSIS

Based on the fine screening analysis, Alternative A – Pumped was determined to be the preferred project alignment. This alternative received the highest final score. Key issues in selecting Alternative A – Pumped as the preferred project alignment included the following:

- Minimal environmental impacts to canyon areas because the alignment would be primarily within existing right of way;
- Minimal property or easement acquisition would be necessary;
- Facilities would be easily accessible for operation and maintenance;
- Capital costs would be less than other alternatives; and
- Would provide the most flexible and easily phased alternative.

Alternative A – Pumped would also incorporate features associated with the existing Otay Valley Trunk Sewer, helping to minimize impacts to the environment. Refinement of the preferred alignment description and phasing is provided in Section 3.0, Project Description, of this EIR.

The second highest score was attributed to Alternative OV – Otay Valley, which served as the “baseline” alternative. Alternatives B – Deep Sewer and C – Canyon Ridge were essentially tied for third highest score. These two alternatives are further discussed in Section 9.2, Project Alternatives.

9.2 PROJECT ALTERNATIVES

9.2.1 NO PROJECT ALTERNATIVE

CEQA requires the No Project Alternative to be addressed in an EIR. Under the No Project Alternative, the proposed OMTS project would not be implemented. The existing sewerage system in the east mesa would continue to pump wastewater to the Otay Valley Trunk Sewer.

The No Project Alternative would not result in conflicts with any adopted land use plans, including the City’s MSCP Land Use Adjacency Guidelines, because no construction would occur under this alternative. Therefore, the No Project Alternative would be consistent with all applicable plans and policies.

Similar to the proposed project, the No Project Alternative would not result in significant impacts to utilities or water quality/hydrology.

The No Project Alternative would avoid significant noise impacts associated with the construction and operation of proposed pump station A1 and the operation of Phase 2C pump stations.

Potentially significant air quality impacts associated with the construction and operation of Phase 2C pump stations, the construction of Phase 3 facilities and the operation of the 35 MGD pump station A1 emergency generators would be avoided under the No Project Alternative because ~~it would not result in any these facilities would not be new construction.~~

Potentially significant impacts to paleontological resources and subsurface prehistoric or historic archeological resources would be avoided because the No Project Alternative would not include any subsurface disturbances or disturbances to historical structures.

The No Project Alternative would avoid direct impacts to sensitive habitats, plants and animals, and indirect impacts to wildlife species because it would not include construction in areas with sensitive biological resources. Potentially significant indirect and direct biological resources impacts associated with Phase 2C pump stations would be avoided.

The No Project Alternative would avoid potentially significant impacts to visual quality/aesthetics and energy associated with Phase 2C pump stations because these facilities would not be constructed.

The No Project Alternative would not involve excavation and construction activities with the potential to encounter contaminated groundwater or include the construction of an underground sewer pipeline that would have the potential to traverse through or near several known hazardous materials contamination sites with existing or previously removed underground storage tanks.

Potential relocation of public utilities would be avoided because no new and/or upgraded wastewater pipelines would be constructed. However, with the anticipated growth in population within the project area, there would be an increase in sewage generation and demands upon utilities. The No Project Alternative would not provide an adequate sewage system for future growth in the Otay Mesa area. Therefore, a new significant impact would occur with implementation of the No Project Alternative. This impact could be mitigated through the provision of new or upgraded wastewater facilities.

In addition, the No Project Alternative would not meet any of the project objectives identified for the proposed project.

9.2.2 CANYON RIDGE ALTERNATIVE

The Canyon Ridge Alternative is a gravity alternative alignment that would be located in the west mesa area. This alternative would eliminate the need for existing Pump Station 23T and proposed Pump Station A1. Existing Pump Station 31T would still be required and Pump Station 48T may still be required. The eastern portions of the alternative alignment along La Media and Siempre Viva Roads would be the same as the proposed project. At the site of existing Pump Station 23T, the Canyon Ridge Alternative would implement a deep sewer pipeline north under Cactus Road for approximately 650 feet. The alignment would then turn west under proposed future roads to Spring Canyon. This alternative alignment would require the construction of a bridge over a portion of Spring Canyon. After crossing the canyon, the alignment would be located in the ROW of the proposed Airway Road extension. Thereafter, the alignment would continue west under Airway Road to Old Otay Mesa Road. Once under Old Otay Mesa Road, the alignment would be the same as the proposed project.

Similar to the proposed project, this alternative would require pump stations and force mains in currently undeveloped portions of the west mesa that have been designated for future development (Phase 2C areas). The force main sewer pipelines would connect to the gravity lines in Caliente and Airway Roads and connect these areas to the Canyon Ridge backbone system in Old Otay Mesa Road.

With regard to the project objectives, this alternative would not fulfill the following project objective:

- Provide upgraded and new sewer service in Otay Mesa over a phased implementation timeline in which facilities are built, as they are needed and in coordination with other major projects in the area.

This alternative would only partially meet the following project objective:

- Provide upgraded and new sewer service pipelines in the Otay Mesa Area within existing ROW.

In addition, two of the project objectives would not be applicable. These two objectives are listed below.

- Upgrade the capacity of existing Pump Station 23T from 2 MGD to 4 MGD; and
- Construct a new Pump Station A1 with a capacity of up to 34 MGD, which would replace temporary Pump Station 23T.

LAND USE

The Canyon Ridge Alternative would be designed to be consistent with relevant plans and policies associated with the construction of a pipeline in areas with sensitive biological resources, including the City of San Diego MSCP Subarea Plan and the Historical Resources Regulations and Environmentally Sensitive Lands (ESL) Regulations of the Land Development Code. The MSCP Subarea Plan allows for the construction of utilities within the MHPA if certain conditions are met. However, the construction of the bridge across Spring Canyon in areas designated as MHPA and containing sensitive biological resources would conflict with the City's MSCP regulations. Since Spring Canyon is an undeveloped natural area, the Canyon Ridge Alternative would also have the potential to conflict with the City's Historical Resources Regulations and ESL Regulations.

Implementation of the Canyon Ridge Alternative would also conflict with two adopted San Diego City Council policies. Council Policy 400-13 focuses on planning for the redirection of sewage discharge away from canyons and other environmentally sensitive lands and Council Policy 400-14 focuses on planning for management of sewer facilities located in canyons and other environmentally sensitive lands. Both policies emphasize that, wherever economically practical, sewer infrastructure should be relocated out of canyons or other environmentally sensitive lands. Both policies were adopted by the City Council on January 22, 2002.

NOISE

This alternative would not require the operation of temporary Pump Station 23T or proposed Pump Station A1 and therefore would result in reduced operational noise impacts as compared to the proposed project. This alternative would have similar impacts as identified for the proposed project with respect to construction noise impacts to residential uses, schools, and business parks. However, noise from construction activities would have the potential to impact sensitive wildlife within Spring Canyon, including federally endangered avian species such as the Least Bell's vireo and Coastal California gnatcatcher. These potential impacts to sensitive human receptors and wildlife species could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

UTILITIES

Similar to the proposed project, this alternative would not result in significant impacts to utilities because it would be designed to avoid major existing utilities.

PALEONTOLOGICAL RESOURCES

Implementation of the Canyon Ridge Alternative would have the potential to significantly impact paleontological resources from subsurface disturbances associated with trenching and tunneling activities that would impact underlying fossil-bearing geologic units. These potential impacts to paleontological resources

could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

HISTORICAL RESOURCES

Implementation of the Canyon Ridge Alternative would have the potential to significantly affect unknown subsurface prehistoric or historic archaeological resources that may exist within the proposed alignment of this project alternative. Potential impacts to historical resources could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

AIR QUALITY

This alternative would result in similar impacts to air quality as identified for the proposed project with respect to Phase 2C pump stations and the construction of Phase 3 facilities. Potential impacts to air quality could be mitigated to below a level of significance with the same measures that were identified for the proposed project. However, this alternative would not result in a potentially significant impact associated with the operation of emergency generators for the 35 MGD pump station because this alternative would not require the construction or operation of this pump station.

BIOLOGICAL RESOURCES

The Canyon Ridge Alternative would have the potential to result in increased impacts to sensitive biological resources because of its location within Spring Canyon. This canyon is located within the Multiple Habitat Planning Area (MHPA) of the City's MSCP and contains sensitive biological habitats including vernal pools, non-native grassland, and coastal sage scrub (MSCP Subarea Plan 1997). The canyon areas support a significant population of MSCP-covered plant and animal species including San Diego thorn-mint, Orcutt's bird's beak, Orcutt's brodiaea, variegated dudleya, San Diego button-celery, coast barrel cactus, Otay tarplant, prostrate navarretia, snake cholla, California orcutt grass, Otay Mesa mint, San Diego goldenstar, small-leaved rose, Riverside fairy shrimp, San Diego horned lizard, orange-throated whiptail, Wright's checkerspot butterfly, northern harrier, Cooper's hawk, golden eagle, peregrine falcon, burrowing owl, cactus wren, and the California gnatcatcher. Similar to the proposed project, construction of the Canyon Ridge Alternative would have the potential to result in significant temporary indirect impacts associated with water quality, air quality, night lighting, noise, and errant construction impacts. Potential impacts to sensitive biological habitats, plants and animals would require mitigation in conformance with the City's MSCP guidelines and the ESL. Indirect construction impacts to biological resources could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

As discussed above under Land Use, implementation of the Canyon Ridge Alternative would conflict with Council Policies 400-13 and 400-14, which emphasize that sewer infrastructure should be relocated out of canyons or other environmentally sensitive lands.

HYDROLOGY/WATER QUALITY

The construction of the Canyon Ridge Alternative would result in potentially increased short-term impacts to water quality because of the landform alteration that may be required in the canyon. Excavation, trenching, grading and clearing activities would make areas more susceptible to erosion. This alternative would comply with the NPDES General Construction Storm Water Permit and would implement necessary construction BMPs to avoid pollutant discharges into the canyon.

GEOTECHNICAL CONDITIONS

Similar to the proposed project, this alternative would not result in significant impacts to geological conditions. Numerous landslides are located within the Spring Canyon area from the west flank of Otay Mesa to the central reaches of the canyon. However, similar to the proposed project, excavations and shoring would be designed and installed in accordance with current Cal-OSHA regulations and requirements. The design and installation of temporary shoring would incorporate adequate and safe support for all existing structures that have the potential to be damaged by earth movement. In addition, design features would be incorporated in order to provide additional pipeline strength through the landslide area to account for potential small movements, the pipeline would be constructed of High Density Polyethylene (HDPE) material with butt-welded joints. The HDPE pipe would provide an essentially seamless (no joint) pipe through the landslide mass, which would provide some elongation in the event of small ground movements in the landslide area. As a result, no significant impact would occur.

HAZARDOUS MATERIALS

This alternative would result in reduced impacts to hazardous materials as identified for the proposed project because it would only be located in roadway ROW in the eastern and western portions of the alignment. The middle portion of the alignment would be located at the edge of Spring Canyon, which would be expected to contain fewer hazardous materials sites than along developed roadways. This alternative would have similar impacts to hazardous materials as the proposed project in the western portion of the alignment along Old Otay Mesa Road, East Beyer Boulevard, San Ysidro Boulevard, and Via de San Ysidro Boulevard. Potential impacts to hazardous materials could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

AESTHETICS/VISUAL QUALITY

This alternative would result in new significant impacts to aesthetics/visual quality associated with the bridge crossing Spring Canyon. It is likely that mitigation to reduce impacts would not reduce them to below a level of significance, and therefore, this impact to aesthetics/visual quality may be significant and unavoidable.

ENERGY

This alternative would reduce demand on energy resources as compared the proposed project because the operation of Pump Stations 23T and A1 would not be necessary.

9.2.3 DEEP SEWER ALTERNATIVE

The Deep Sewer Alternative is a gravity alternative in which the sewer pipeline would be located along a similar alignment as the proposed project but at increased depth. This alternative would eliminate the need for existing Pump Station 23T and proposed Pump Station A1. Existing temporary Pump Stations 31T and 48T would still be required and new Phase 2C pump stations would also be required. The eastern portions of the alternative alignment along La Media and Siempre Viva Roads and the western portions of the alignment along Old Otay Mesa Road, East Beyer Boulevard, Center Street, San Ysidro Boulevard, and Via de San Ysidro Boulevard would be the same as the proposed project. At the site of existing Pump Station 23T, the Deep Sewer Alternative would implement a sewer pipeline at a depth of 30-feet under Cactus Road and transition to a deep sewer approximately 400 feet north of Pump Station 23T. The deep sewer pipeline alignment would follow Cactus Road to the north and then to the west under Camino Maquiladora. The alignment would follow Camino Maquiladora in a westerly direction to the proposed Heritage Road under-crossing of SR-905. After this under-crossing, the alignment would continue west under Otay Mesa Road to Caliente Road. The alignment would be located under Caliente Road to Airway Road, and would continue

west under Airway Road to Old Otay Mesa Road. At this point, the alignment would be similar to the proposed project alignment and would become shallower and flow by gravity to the San Ysidro Interceptor.

With regard to the project objectives, this alternative would not fulfill the following project objective:

- Provide upgraded and new sewer service in Otay Mesa over a phased implementation timeline in which facilities are built, as they are needed and in coordination with other major projects in the area.

This alternative would only partially meet the following project objective:

- Provide upgraded and new sewer service pipelines in the Otay Mesa Area within existing ROW.

In addition, two of the project objectives would not be applicable. These two objectives are listed below.

- Upgrade the capacity of existing Pump Station 23T from 2 MGD to 4 MGD; and
- Construct a new Pump Station A1 with a capacity of up to 34 MGD, which would replace temporary Pump Station 23T.

LAND USE

This alternative would be located below existing roadways in the Otay Mesa community and would not be likely to conflict with adopted plans and policies such as the City's Progress Guide and General Plan, Otay Mesa Community Plan, the City's Environmentally Sensitive Lands Guidelines or the City's Historical Resources Regulations. However, similar to the proposed project, the Deep Sewer Alternative may result in a conflict with the City's MSCP Land Use Adjacency Guidelines. Mitigation measures similar to those implemented for the proposed project would mitigate these impacts to a level less than significant.

NOISE

Operational noise impacts associated with this alternative would be reduced because this alternative would not require the construction or operation of existing pump station 23T or new pump station A1. However, noise impacts associated with the construction and operation of Phase 2C facilities would be similar to those identified for the proposed project. Construction noise impacts for this alternative would be similar to those identified for the proposed project. Potential impacts from construction noise could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

PALEONTOLOGICAL RESOURCES

Implementation of the proposed project would have similar potential significant impacts on paleontological resources as identified for the proposed project. Potential impacts to paleontological resources could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

UTILITIES

Similar to the proposed project, this alternative would not result in a significant impact to utilities because it would be designed to avoid major existing utilities.

HISTORICAL RESOURCES

Implementation of the Deep Sewer Alternative would have similar impacts to unknown subsurface prehistoric or historic archaeological resources as identified for the proposed project. Potential impacts to historical resources could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

AIR QUALITY

The Deep Sewer Alternative would result in reduced air quality impacts as identified for the proposed project because it would not involve the construction of the proposed 35 MGD pump station A1. Impacts associated with the construction of Phase 3 facilities and the construction and operation of Phase 2C facilities would be similar to those identified for the proposed project. Potential impacts to air quality could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

BIOLOGICAL RESOURCES

This alternative would result in reduced impacts to biological resources as compared to the proposed project because it would not require the development of the proposed Pump Station A1 site, which would impact 2.8 acres of non-native grassland habitat. Potential indirect impacts from construction activities would be similar to those identified for the proposed project, and would include reduced water and air quality, and increased noise, lighting and errant construction impacts. Potential indirect impacts to biological resources during construction of the Deep Sewer Alternative could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

HYDROLOGY/WATER QUALITY

The Deep Sewer Alternative would increase the potential to contaminate groundwater during construction activities from drilling for the proposed pipeline. The depths of the pipeline would be deeper and thus more likely to encounter groundwater. Mitigation to reduce the potential for groundwater contamination may be required.

GEOTECHNICAL CONDITIONS

This alternative would result in similar wind and water erosion impacts as identified for the proposed project. While the sewer would be deep along the eastern portions of the alignment, it would be located at the same depth as the proposed project on most of Old Otay Mesa Road where the landslide is located. Similar to the proposed project, excavations and shoring would be designed and installed in accordance with current Cal-OSHA regulations and requirements. The design and installation of temporary shoring would incorporate adequate and safe support for all existing structures that have the potential to be damaged by earth movement. In addition, design features would be incorporated in order to provide additional pipeline strength through the landslide area to account for potential small movements; the pipeline would be constructed of High Density Polyethylene (HDPE) material with butt-welded joints. The HDPE pipe would provide an essentially seamless (no joint) pipe through the landslide mass, which would provide some elongation in the event of small ground movements in the landslide area. As a result, no significant impact would occur.

HAZARDOUS MATERIALS

Since The Deep Sewer Alternative would be located along a similar alignment as the proposed project, there would be a similar potential to result in significant hazardous materials impacts as identified for the proposed project due to contaminated soils and groundwater that may exist along the alignment. Potential impacts to

hazardous materials could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

VISUAL QUALITY/AESTHETICS

Similar to the proposed project, potentially significant visual impacts associated with Phase 2C facilities would still occur. This impact could be mitigated to below a level of significance with the same measures that were identified for the proposed project.

ENERGY

This alternative would reduce demand on energy resources as compared the proposed project because the operation of pump stations 23T and A1 would not be necessary.

CHAPTER 10

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CHAPTER 11.0

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